PART 2 – CONTRACT DATA CONDITIONS

AIRPORTS COMPANY
SOUTH AFRICA

AIRPORTS COMPANY
SOUTH AFRICA

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

PROJECT NAME AND NUMBER: 4429: RUNWAY AND TAXIWAY REHABILITATION

TITLE OF PROJECT: REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

Between **AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED**

Applicable at Chief Dawid Stuurman International airport

(Registration Number: 1993/004149/30)

and

(Registration Number: _____)

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

PROJECT No: 4429

for **RUNWAY AND TAXIWAY REHABILITATION**

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PART C1: AGREEMENTS AND CONTRACT DATA

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

PROJECT No: 4429

Contents:		**No of pages**
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AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED
CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

C1: AGREEMENT AND CONTRACT DATA

C1.1: FORM OF OFFER AND ACCEPTANCE (AGREEMENT)

OFFER

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

TENDER NO: PEA8080/2025/RFP

FOR THE REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

The Tenderer, identified in the Offer signature block, has examined the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, and by submitting this Offer has accepted the Conditions of Tender.

By the representative of the Tenderer, deemed to be duly authorized, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all of the obligations and liabilities of the Contractor under the Contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the Conditions of Contract identified in the Contract Data.

THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF VALUE ADDED TAX IS:

……

…….Rand (in words);

R .....…….(in figures)

This Offer may be accepted by the Employer by signing the Acceptance part of this Form of Offer and Acceptance and returning one copy of this document to the Tenderer before the end of the

period of validity stated in the Tender Data, whereupon the Tenderer becomes the party named as the Contractor in the Conditions of Contract identified in the Contract Data.

For the Tenderer Signature.....
Name.....
Capacity .....

Name and address of organization .....
.....
.....

Signature and name of witness Signature.....
Name.....

Date .....

ACCEPTANCE

By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the Tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the Conditions of Contract identified in the Contract Data. Acceptance of the Tenderer's Offer shall form an agreement between the Employer and the Tenderer upon the terms and conditions contained in this Agreement and in the Contract that is the subject of this Agreement.

The terms of the contract, are contained in:

Part C1: Agreements and Contract Data, (which includes this Agreement)
Part C2: Pricing Data
Part C3: Scope of Work.
Part C4: Site Information
Part C5: Annexures

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C5 above.

Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto as listed in the Tender Schedules as well as any changes to the terms of the Offer agreed by the Tenderer and the Employer during this process of offer and acceptance, are contained in the Schedule of Deviations attached to and forming part of this Agreement. No amendments to or deviations from said documents are valid unless contained in this Schedule, which must be duly signed by the authorised representative (s) of both parties.

The Tenderer shall within two weeks after receiving a completed copy of this Agreement, including the Schedule of Deviations (if any), contact the Employer's Agent (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

Notwithstanding anything contained herein, this Agreement comes into effect on the date when the Tenderer receives one fully completed original copy of this document, including the Schedule of Deviations (if any). Unless the Tenderer (now Contractor**)** within five working days of the date of such receipt notifies the Employer in writing of any reason why he cannot accept the contents of this Agreement, this Agreement shall constitute a binding contract between the parties.

Signature ..... Date .....

Name .....

Capacity .....

For the

Employer **Airports Company South Africa SOC Limited**
Administrator Office, Aeropark Office Complex, Block A,
1st Floor, Alister Miller Drive,
Walmer, Gqeberha, South Africa

Name and signature of witness ..... Date .....

SCHEDULE OF DEVIATIONS

Notes:

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender,
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such, letter, which constitutes a deviation as aforesaid become the subjects of agreements reached during the process of, offer and acceptance, the outcome of such agreement shall be recorded here,
3. Any other matter arising from the process from offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here,
4. Any change or addition to the tender documents arising from the above agreements and recorded here, shall also be incorporated into the final draft of the Contract,

1 Subject.....
Details.....

2 Subject.....
Details.....

3 Subject.....
Details.....

4 Subject.....
Details.....

5 Subject.....
Details.....

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Tenderer agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the Tenderer and the Employer during this process of offer and acceptance.

It is expressly agreed that no other matter whether in writing, oral communication or implied during the period between the issue of the tender documents and the receipt by the Tenderer of a completed signed

copy of this Agreement shall have any meaning or effect in the contract between the parties arising from this Agreement.

For the Tenderer:	For the Employer:
Signature	Signature……
Name ……	Name ……..
Capacity	Capacity.....
Name and address of organisation	Name and address of organisation
.....	…….
.....	…….
.....	…….
Witness Signature.....	Witness Signature …….
Name ……	Name ……..
Date	Date ……

CONFIRMATION OF RECEIPT

The Tenderer (now Contractor), identified in the Offer part of this Agreement hereby confirms receipt from the Employer, identified in the Acceptance part of this Agreement, of one fully completed original copy of this Agreement, including the Schedule of Deviations (if any) today:

the .....(day)

of .....(month)

20 .....(year)

at .....(place)

For the Contractor

Signature	Signature .....
Name	Name ....
Capacity.....	Capacity .....

Witness Signature.....	Witness Signature .....
Name	Name .....

C1.2: CONTRACT DATA

C1.2.1 General Conditions of Contract

The following standardized General Conditions of Contract:

General Conditions of Contract for Construction Works (Third Edition) 2015

prepared by the South African Institution of Civil Engineering (SAICE) shall apply to and form the General Conditions of Contract for this contract. Copies of these conditions of contract are obtainable from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, email: civilinfo@saice.org.za.

Copies of the General Conditions of Contract are available for inspection and scrutiny at the offices of the Employer and Employer's Agent.

The Pro-formas bound with the General Conditions of Contract 2015, from page 78 to page 95 shall not apply to this Contract and shall be replaced with the following:

C1.1: Form of Offer and Acceptance
C1.2: Contract Data (This section)
Pro forma Security, Bonds and Guarantees:
- C1.3: Performance Guarantee
- C1.4: Retention Guarantee

C1.5: Adjudication Board Member Agreement
C1.8: Disclosure Statement
C1.9: Insurance Schedule
C1.10: The Adjudication Board Panel

C1.2.2 Special Conditions of Contract

Amendments, deletions and/or additions to the General Conditions of Contract as Special Conditions of Contract prescribed by the Employer are set out below. Each item of the Special Conditions of Contract given below is cross-referenced to the clause in the General Conditions of Contract for Construction Works (Third Edition) 2015 to which it mainly applies and additional clauses follow on from those used in the General Conditions of Contract.

The following Special Conditions of Contract as prescribed by the Employer, referring to the General Conditions of Contract for Construction Works (Third Edition) 2015, are applicable to this Contract:

Clause Ref.	Sub-Heading	Special Conditions
1.	**GENERAL**	
1.1	Definitions	The following definitions are amended as set out below:
1.1.1.12	"Day"	Add the following at the end of Clause 1.1.1.12: "*and '**Business Day**' means any day that is not a Saturday, Sunday or official public holiday in the Republic of South Africa."*
1.1.1.16	"Employer's Agent"	Add the following at the end of Clause 1.1.1.16: *"Where reference is made to the term 'Engineer' in the Project Specifications or anywhere in the contract document, the terms 'Engineer and 'Employer's Agent' shall have the same meaning."*
1.1.1.24	"Practical Completion"	Amend Clause 1.1.1.24 to read as follows: *"means that the whole or portion of the Works has reached a state of readiness, and are fit for the purposes intended as stated in the Contract Data and/or the Scope of Work (or if no purpose is stated, their ordinary purpose), and may be occupied without any danger or undue inconvenience to the Employer, even though some minor work may be outstanding."*
	Additional Definitions	Add the following new definitions to the General Conditions of Contract:
1.1.1.35	"Contractor's Design Documents"	"*means the drawings, design details and specifications of work, Plant and Materials prepared by the Contractor for the works*."
1.1.1.36	"Contractor's Key Personnel"	*"means the persons listed in Appendix 6* [Contractor's Key Personnel Schedule].[1]
1.1.1.37	"Contractor's Personnel"	"*means the Contractor's Representative, the Contractor's Key Personnel and all persons whom the Contractor utilises on Site, who may include staff, labour and other employees of the Contractor and of each subcontractor or supplier and any other*

Clause Ref.	Sub-Heading	Special Conditions
		personnel assisting the Contractor in the execution of the Works."
1.1.1.38	"Contractor's Site Agent"	"*has the meaning assigned to it in Clause 4.12.2 and is the natural person named in the Contract Data".*
1.1.1.39	"Early Warning Event"	*"means any events, circumstances or factors which may adversely affect the Works or the progress thereof, including any events, circumstances or factors which may delay the execution of the Works or increase the Contract Price, or otherwise adversely affect the Employer's operations on Site."*
1.1.40	"Reasonable and Prudent Contractor"	*"means a person seeking in good faith to perform its contractual obligations and, in so doing and in the general conduct of its undertaking, exercising that degree of skill, diligence, prudence, responsibility and foresight which would reasonably and ordinarily be expected from a skilled and appropriately experienced construction contractor, who is complying with all applicable laws, engaged in the same or a similar type of undertaking, in the same or similar circumstances and conditions, and any references to the "Standards of a Reasonable and Prudent Contractor" shall be construed accordingly."*
1.1.1.41	"Risk Register"	*"means the list of Early Warning Events notified by the Contractor to the Employer, which list shall be maintained and updated by the Contractor on a regular basis."*
1.2	Interpretation	
1.2.1	Delivery of Notices	Delete Clause 1.2.1 and replace with the following: *"1.2.1. Whenever this Contract provides for the giving or issuing of written communications, these communications shall:* *1.2.1.1. be in writing and shall clearly state on the face of the document that it is a communication made in accordance with*

Clause Ref.	Sub-Heading	Special Conditions
		this Contract and reference the Clause under the Contract in terms of which the communication is made; *1.2.1.2. be delivered, sent or transmitted to the addresses for the recipient's communication as stated in the Contract Data, provided that either party shall be entitled to change their address for communications on written notice to the other party.* *1.2.2. Communications delivered by hand shall be delivered against receipt and communications transmitted via electronic mail shall be deemed to be received when the communication is capable of being retrieved by the recipient, provided that such communications shall only be valid if sent as a PDF attachment to the electronic mail or other form which cannot be edited or altered.* *1.2.3. References in the Contract to oral communications are deleted. "*
1.2.6	Principles of Interpretation	Add the following new Clause 1.2.6: "*In this Contract, except where the context indicates otherwise:* *1.2.6.1 references to the Contractor include the obligations of the Contractor's Personnel;* *1.2.6.2 references in this Contract to any deed, agreement or instrument are deemed to include references to such other deed, agreement or instrument as amended, novated, supplemented, varied or replaced from time to time;* *1.2.6.3 references to the provisions of any law shall include such provisions as amended, re-enacted or consolidated from time to time*

Clause Ref.	Sub-Heading	Special Conditions
		in so far as such amendment, re-enactment or consolidation applies or is capable of applying to any Works under this Contract;
		1.2.6.4 references to a statutory provision include any subordinate legislation made from time to time under that provision and includes that provision as modified or re-enacted from time to time;
		1.2.6.5 where figures are referred to in figures and in words, if there is any discrepancy between the two, the words shall prevail;
		1.2.6.6 if a definition imposes substantive rights and obligations on a party, such rights and obligations shall be given effect to and shall be enforceable, notwithstanding that they are contained in the definition;
		1.2.6.7 where a word is defined within the context of any particular clause in this Contract, that word, unless it is clear from the clause in question that that word has limited application only to the relevant clause, shall bear the meaning ascribed to it for all purposes in terms of this Contract, notwithstanding that it is not defined in clause 1.1 above;
		1.2.6.8 words defined in this Contract shall bear the same meanings in any annexures or schedules to this Contract and if those annexures or schedules contain their own definitions the definitions in these Conditions shall take precedence;
		1.2.6.9 words and abbreviations that have well known technical or trade meanings are used in the Contract in accordance with such recognized meanings;

Clause Ref.	Sub-Heading	Special Conditions

1.2.6.10 where any number of days is prescribed, those days shall be reckoned exclusively of the first and inclusively of the last day unless the last day falls on a day that is not a Business Day, in which event the last day shall be the next succeeding Business Day;

1.2.6.11 the rule of construction that if general words or terms are used in association with specific words or terms that are a species of a particular genus or class, the meaning of the general words or terms shall be restricted to that same class shall not apply, and whenever the word "including" is used followed by specific examples, such examples shall not be interpreted so as to limit the meaning of any word or term to the same genus or class as the examples given.

1.2.6.12 the rule of construction that the Contract shall be interpreted against or to the disadvantage of the Party responsible for the drafting or preparation of this Contract shall not apply;

1.2.6.13 any provision in this Contract that is or may become illegal, invalid or unenforceable in any jurisdiction shall be ineffective to the extent of such prohibition or unenforceability in such jurisdiction and shall be treated as severed from the balance of this Contract in such jurisdiction, without invalidating the remaining provisions of this Contract in such jurisdiction or affecting it in any other jurisdiction;

Clause Ref.	Sub-Heading	Special Conditions
		1.2.6.14 time is of the essence in the performance of the Contractor's obligations; and *1.2.6.15 references containing terms such as 'best endeavours' when used in connection with an obligation of the Contractor, means taking in good faith and with due diligence all reasonable steps to achieve the objective and to fulfil the obligation at the earliest possible time, including doing all that a Reasonable and Prudent Contractor in comparable circumstances would do."*
1.3.1	Concession not to constitute a wavier	Amend Clause 1.3.1 by adding the following words after the word "Employer" in the first line: *", Employer's Agent"*
1.3.5	Contractor's copyright	Add the following at the end of Clause 1.3.5: "*The Contractor shall indemnify and hold the Employer harmless against and from any claim alleging an infringement of intellectual property rights which arises out of or in relation to the Contractor's design, manufacture, construction or execution of the Works or the proper use of the Works*."
1.3.7	Joint and several liability	Add the following new Clause 1.3.7: "*1.3.7.1 If the Contactor constitutes a joint venture, consortium or other unincorporated grouping of two or more persons, these persons are deemed to be jointly and severally liable to the Employer for the performance of the Contract.* *1.3.7.2 The Contractor shall, within 1 week of the Commencement Date, notify the Employer's Agent and the Employer of the key person who has the authority to bind the Contractor on their behalf."* *1.3.7.3 The Contractor does not materially alter the composition of the joint venture, consortium or*

Clause Ref.	Sub-Heading	Special Conditions
		other unincorporated grouping of two or more persons without prior written consent of the Employer."
1.3.8	Ethics	Add the following new Clause 1.3.8: "*1.3.8.1 The Contractor undertakes not to give any offer, payment, consideration, or benefit of any kind, which constitutes or could be construed as an illegal or corrupt practice, either directly or indirectly, as an inducement or reward for the award or in execution of this contract;* *1.3.8.2 The Contractor shall comply with all laws, regulations or policies relating to the prevention and combating of bribery, corruption and money laundering to which it or the Employer is subject, including but not limited to the Prevention and Combating of Corrupt Activities Act, 12 of 2004.* *1.3.8.3 The Contractor's breach of this clause constitutes grounds for terminating the Contractor's obligation to provide the Works or taking any other action as appropriate against the Contractor (including civil or criminal action). However, lawful inducements and rewards shall not constitute grounds for termination.* *1.3.8.4 If the Contractor is found guilty by a competent court, administrative or regulatory body of participating in illegal or corrupt practices, including but not limited to the making of offers (directly or indirectly), payments, gifts, gratuity, commission or benefits of any kind, which are in any way whatsoever in connection with the contract with the Employer, the Employer shall be entitled to terminate the Contract immediately on notice to the Contractor.*"
1.3.9	Confidentiality	Add the following new Clause 1.3.9: *"1.3.9.1 All information obtained in terms of this Contract or arising from the implementation of this*

Clause Ref.	Sub-Heading	Special Conditions

Contract shall be treated as confidential by the Contractor and shall not be used or divulged or published to any person not being a party to this contract, without the prior written consent of the Employer's Agent or the Employer, which consent shall not be unreasonably withheld.

1.3.9.2 If the Contractor is uncertain about whether any such information is confidential, it is to be regarded as such until otherwise notified by the Employer's Agent.

1.3.9.3 This undertaking shall not apply to –

(a) Information disclosed to the employees of the Contractor for the purposes of the implementation of this Contract. The Contractor undertakes to procure that its employees are aware of the confidential nature of the information so disclosed and that they comply with the provisions of this clause;

(b) Information which the Contractor is required by law to disclose, provided that the Contractor notifies the Employer prior to disclosure so as to enable the Employer to take the appropriate action to protect such information. The Contractor may disclose such information only to the extent required by law and shall use reasonable efforts to obtain assurances that confidential treatment will be afforded to the information so disclosed;

(c) Information which at the time of disclosure or thereafter, without default on the part of the Contractor, enters the public domain or to information which was already in the possession of the Contractor at the time of

Clause Ref.	Sub-Heading	Special Conditions
		disclosure (evidenced by written records in existence at that time); *1.3.9.4 The taking of images (whether photographs, video footage or otherwise) of the Works or any portion thereof, in the course of providing the Works and after the Due Completion Date, requires the prior written consent of the Employer's Agent. All rights in and to all such images vests exclusively in the Employer.* *1.3.9.5 The Contractor ensures that all his subcontractors abide by the undertakings in this clause 1.3.9"*
2	**BASIS OF CONTRACT**	
2.1.3	Obtaining Information	Add the following at the end of Clause 2.1.3: "*The Contractor shall be deemed to have made allowances in his programme for all such risks, contingencies and all other circumstances which may influence of affect the Works*."
2.2.1	Adverse physical conditions	Amend the first paragraph of Clause 2.2 by adding the words in italics: "If, while carrying out the Works, the Contractor shall encounter adverse physical conditions (other than weather conditions at the Site or the direct consequences of those particular weather conditions) or artificial obstructions, which conditions or obstructions could not have been reasonably foreseen by an experienced contractor at the time of submitting his tender, and the Contractor is of the opinion that additional work will be necessary which would not have been necessary if the particular physical conditions or artificial obstructions had not been encountered, he shall give notice to the Employer's Agent in writing as soon as he becomes aware of the conditions or obstructions aforesaid *but in any event within 5*

Clause Ref.	Sub-Heading	Special Conditions
		days of the date on which he ought to have become aware of the conditions or obstructions, stating:"
2.2.3	Contractor to carry out additional work	Delete Clause 2.2.3 and replace with the following: "*The Employer's Agent shall respond to the Contractor's notice in terms of Clause 2.2.1 within 14 days of the notice. If the Employer's Agent fails to respond within the period specified, the Contractor shall carry out the additional work proposed in the notice or notices under Clauses 2.2.1 and 2.2.2 without limiting the right of the Employer's Agent to order a suspension of work in terms of Clause 5.11.2 or a variation in terms of Clause 6.3.*"
2.3	Technical data	Add the following new Clause 2.3.2: "*It is the Contractor's obligations to verify the accuracy of the technical data provided by the Employer and its failure to do so shall be taken into account in the assessment of the Contractor's claim, if any."*
2.5	Assignment	Delete Clause 2.5.1 and replace with the following: *"2.5.1 The Contractor shall not cede, delegate or assign any of its rights or obligations to any person without the written consent of the Employer, which consent shall not be unreasonably withheld. This clause shall be binding on the liquidator/business rescue practitioner/trustee (whether provisional or not) of the Contractor.* *2.5.2 The Employer may, on written notice to the Contractor, cede and delegate its rights and obligations under this contract to any person or entity."*
3	**EMPLOYER'S AGENT**	
3.2.4	Employer's Agent for health and safety	*Delete and replace with the following:* *"The Employer may, by written notice to the Contractor and the Employer's Agent, authorise an agent to act as his representative relating to*

Clause Ref.	Sub-Heading	Special Conditions
		responsibilities imposed by the Occupational Health and Safety Act 85 of 1933 and the Construction Regulation 2014 on the Employer. Such an agent, if not the Employer's Agent, shall be responsible to the Employer's Agent in terms of this Contract.
4	**CONTRACTOR'S GENERAL OBLIGATIONS**	
4.1.1	Extent of Contractor's obligations	Clause 4.1.1 is re-numbered as Clause 4.1.1.1 and the following is added as a new Clause 4.1.1.2: "*The Contractor shall ensure that the Works, when complete, are fit for their intended purpose as stated in the Contract Data and/or the Scope of Work. Where no purpose is stated, the Contractor shall ensure that the Works are fit for their ordinary purpose*."
4.1.2	Contractor's liability for own design errors	This heading is amended to read: "*The Contractor's liability for design*" Delete Clause 4.1.2 and replace with the following: "*4.1.2.1. Where any part of the Works, whether permanent or temporary is designed by the Contractor, he shall, notwithstanding any approval of the Employer's Agent be liable for any error or deficiency in any design, drawing or document and any loss or damage arising out of such error or deficiency.* *4.1.2.2. Without prejudice to any other provision of this Contract, the Contractor shall, in the performance of its design obligations under this Contract, exercise all the reasonable skill, care and diligence to be expected of a prudent, competent and properly qualified engineer or other appropriate designer experienced in the provision of like services for projects of a size, scope, nature and complexity and in a physical location similar to the Works. The Contractor's obligations in terms of this Clause shall not detract from the Contractor's*

Clause Ref.	Sub-Heading	Special Conditions
		obligation to produce a design which is fit for purpose stated in the Contract Data and/or the Scope of Work, and if no such purpose is stated, its ordinary purpose."
4.2.1	Employer's Agents Instructions	Add the following at the end of Clause 4.2.1: "*provided such instructions are given in writing. If the Contractor considers the instruction to constitute a Variation Order, he shall proceed in accordance with Clause 6.3.2.1*."
4.2.3	Setting-out of the Works	Add the following new Clause 4.2.3: *"4.2.3.1 The Employer's Agent shall establish the basic reference pegs and benchmarks on the Site and give to the Contractor the particulars thereof in sufficient time to enable the Contractor to meet his approved programme. It shall be the Contractor's responsibility to verify the accuracy of these items of reference before they are used for the Works and rectify any errors.* *4.2.3.2 After compliance by the Employer's Agent with the provisions of Clause 4.2.3.1, the Contractor shall be responsible for the true and proper setting out of the Works and for the correctness of the position, levels, dimensions and alignment of all parts of the Works and for the provision of all necessary instruments, appliances and labour in connection therewith.* *4.2.3.3 If at any time during the progress of the Works, any error shall appear or arise in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required to do so by the Employer's Agent, shall at his own expense rectify such error to the satisfaction of the Employer's Agent, but if such error is based on incorrect data supplied in writing by the Employer's Agent or if there is any delay in providing the particulars required in terms of Clause 4.2.3.1, the*

Clause Ref.	Sub-Heading	Special Conditions
		Contractor shall, in respect of that delay and the Cost of such rectification, be entitled to make a claim in accordance with Clause 10. *4.2.3.4. The Contractor shall carefully protect and preserve all benchmarks, sight-rails, pegs and other things used in setting out the Works.* *4.2.3.5. The checking of any setting-out or of any line or level by the Employer's Agent shall not relieve the Contractor of his responsibility for the correctness thereof*."
4.3.1	Compliance with applicable laws	Delete Clause 4.3.1 and replace with the following: "*The Contractor shall, in fulfilling the Contract, comply with all the Contract and all applicable laws, the Standards of a Reasonable and Prudent Contractor, the current Working Airside Manuel relevant to the Works or the site, relevant codes of good practice and the requirements of any public authority having jurisdiction over the Works, the site or the parties. The Contractor shall promptly provide proof of such compliance at the request of the Employer's Agent*."
4.4.7	Assignment of benefit of subcontract	Add the following at the end of Clause 4.4.7: "*The Contractor shall use its best endeavours (and shall bear the onus of proving that it has done so) to ensure (save to the extent actually prevented from doing so by law), in each subcontract that he enters into, that the Contractor's rights and obligations under the subcontract are capable of being freely assigned, ceded and delegated in full, without limitation and/or further consent being required from the Contractor, to the Employer or any affiliate of the Employer*."
4.4.8	Payment to subcontractors	Add the following new Clause 4.4.8: "*4.4.8.1.If the Contractor does not make payment of any amount due and payable by him to a Subcontractor and the Employer considers that*

Clause Ref.	Sub-Heading	Special Conditions
		such non-payment may adversely impact the progress of the Works or generally the obligations of the Contractor under the Contract, the Employer shall be entitled to require the Contractor to supply evidence of payment of the Subcontractor or, as applicable, justification for the non-payment. *4.4.8.2 In the absence of such evidence or justification to the reasonable satisfaction of the Employer, the Employer is entitled, but not obliged, to make payment directly to the Subcontractor in which event such payment is, for all purposes under the Contract, regarded as a payment made on behalf of the Contractor and at the request of and with the approval and consent of the Contractor, as a payment towards the Contract Price.* *4.4.8.3. Notwithstanding anything to the contrary in the Contract, all payments made directly to the Subcontractor shall be set off against the next payment to the Contractor.*"
4.8.1	Facilities for others	Add the following at the end of Clause 4.8.1: "*and shall be deemed to have made allowances in his programme for work carried out by others*"
4.9.	Construction Equipment	Add the following new Clauses after Clause 4.9.1 : "*4.9.2 The Contractor shall ensure that any Construction Equipment brought onto the Contractor's working areas are stored and marked in accordance with the current version of the Working Airside Manual applicable to such working areas, or other such requirements which may be communicated by or on behalf of the Employer from time to time.* *4.9.3. In order to preclude seizure by the owner of any Construction Equipment being held by the Contractor on a hire-purchase agreement for the purposes of the Contract, the Employer shall be entitled, but not obliged, to pay any such owner the*

Clause Ref.	Sub-Heading	Special Conditions
		amount of any outstanding instalment or other sum owing under any hire or hire-purchase agreement and in the event of his doing so, any amount thus paid by him shall be a debt payable to the Employer by the Contractor and may be deducted by the Employer from any monies owing or that may become owing the Contractor in terms of the Contract, or be recovered at law from the Contractor by the Employer. *4.9.4 When entering into any subcontract for the execution of any part of the works, the Contractor shall incorporate in such subcontract, by reference or otherwise, the provisions of this clause in respect of Construction Equipment brought to the Site by the subcontractor*."
4.10	Contractor's employees	Add the following new Clause 4.10.3: "*The Contractor shall:* *4.10.3.1. comply with all relevant labour laws applicable to the Contractor's Personnel relating to their employment, wages, working hours, health and safety, welfare,, immigration and emigration laws and the requirements of any public authorities having jurisdiction over the Works, the Site or the parties;* *4.10.3.2. ensure that it pays rates and wages, and observes conditions of labour, which comply with the applicable law and are not lower than those established for the trade or industry where the work is carried out. if rates no conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observes locally by employees whose trade or industry is similar to that of the Contractor*; *and* *4.10.3.3 not recruit or attempt to recruit staff and labour from amongst the Employer's personnel*."

Clause Ref.	Sub-Heading	Special Conditions
4.13	Engagement of foreign Employees	Add the following as a new Clause 4.13: "4.13.1 *Other than the Contractor's Key Personnel, the Contractor shall not be entitled to bring into the Country any foreign personnel to execute the Works, without the prior written consent of the Employer.* *4.13.2 Any riot, commotion, disorder, strike or lockout arising from the Contractor's use of foreign personnel shall not entitle the Contractor to make a claim. For the avoidance of doubt, the Employer is absolved from any and all liability arising from the Contractor's use of foreign personnel.* *4.13.3 The Contractor shall apply for the necessary authorities and permits together with any visas and work permits required in order for the Contractor to employ foreign personnel in South Africa. It shall be the Contractor's responsibility to ensure that obtaining the necessary authorities, permits and visas for its foreign personnel does not delay the Works. For the avoidance of doubt, the Contractor shall not be entitled to make a claim where delays in obtaining the necessary authorities, permits and visas for its foreign personnel result in a delay to the progress of the Works.* *4.13.4 All costs incurred by the Contractor in obtaining and renewing the required permits as well as any costs incurred as a result of having failed to comply with the said relevant requirements prescribed by the said applicable laws shall be for the Contractor's account.*

Clause Ref.	Sub-Heading	Special Conditions
		4.13.5 *The Contractor shall be responsible for the return of foreign personnel to the place where they were recruited or to their domicile. In the event of the death in the Country of any of these personnel or members of their families, the Contractor shall similarly be responsible for making the appropriate arrangements for their return for burial*."
5.	**TIME AND RELATED MATTERS**	
5.6.2	Contents of the programme	Add the following at the end of Clause 5.6.2: *"For each operation, a statement of how the Contractor plans to do the work identifying the principle equipment and other resources which he plans to use."*
5.9.1	Instructions	Add the following paragraph at the end of Clause 5.9.1: "*All additional copies, whether provided by the Employer's Agent or reproduced by the Contractor, shall be to the Contractor's account*."
5.9.7	Employer's Agent to approve Contractor's design and drawings	Amend Clause 5.9.7 by adding the following new provisions after Clause 5.9.7.1: "*5.9.7.2 Where applicable, the Contractor submits the Contractor's Design Documents to the Employer's Agent for acceptance at the times and in the manner and format stated in the works information.* *5.9.7.3 The Employer's Agent returns each Contractor's Design Document to the Contractor marked either 'A' (accepted), 'B' (accepted with comments) or 'C' (rejected). If the Employer's Agent marks a Contractor's Design Document 'B' or 'C', he states his reasons. A reason for not accepting a Contractor's Design Document is that it does not comply with: (a) the*

Clause Ref.	Sub-Heading	Special Conditions
		Scope of Work; (b) any previous Contractor's design documents which the Employer's Agent has returned marked 'A', or the Employer's Agent has returned marked 'B' and the Contractor has amended to incorporate the Employer's Agents comments; (c) the applicable law; or (d) any other provision of this Contract.
		5.9.7.4 If the Employer's Agent does not return a Contractor's design document within the period for reply, it is treated as having been returned marked 'A'.
		5.9.7.5 Where a Contractor's design document is returned marked 'A', the Contractor proceeds with the relevant work in accordance with the Contractor's Design Document.
		5.9.7.6 Where a Contractor's Design Document is returned marked 'B', the Contractor: (a) amends the Contractor's design document to incorporate the Employer's Agents comments; (b) submits the Contractor's design document as so amended to the Employer's Agent; and (c) proceeds with the relevant work in accordance with the Contractor's Design Document as so amended.
		5.9.7.7 Where a Contractor's Design Document is returned marked 'C', the Contractor: (a) amends the Contractor's Design Document to incorporate the Employers Agent's comments; (b) re-submits it to the Employers Agent for acceptance; and (c) does not proceed with the relevant work until the Employers Agent has returned it

Clause Ref.	Sub-Heading	Special Conditions
		marked 'A' or 'B' and, where it is marked 'B', has complied with clause 5.9.7.6.
		5.9.7.8 If the Contractor disagrees with a comment of the Employers Agent on a Contractor's Design Document marked 'B' or 'C', he notifies the Employers Agent within one week of receipt stating his reasons and that in his opinion compliance with the comment will give rise to a change in the works information. The Employers Agent replies within one week of receipt of the Contractor's notice either confirming or withdrawing his comment. A confirmation or withdrawal by the Employers Agent is not an acceptance of the Contractor's opinion.
		5.9.7.9 If the Contractor does not notify the Employers Agent within one week that he disagrees with a comment of the Employers Agent, compliance with the comment does not give rise to a variation in terms of the Contract."
5.9.8	Drawing and Specifications by the Contractor	Add the following as a new Clause 5.9.8: *"5.9.8.1 The originals of all drawings and specifications prepared by or on behalf of the Employer's Agent shall remain in his custody and references herein to delivery to the Contractor of drawings or specifications shall relate to true copies thereof both in hard copy and electronic format.* *5.9.8.2. The Contractor shall be entitled to receive free of charge, to the extent provided in the Contract, copies of each such drawing and specification and to receive, or reproduce, such additional copies as he shall reasonably require. All additional copies, whether provided by the*

Clause Ref.	Sub-Heading	Special Conditions
		Employer's Agent or reproduced by the Contractor, shall be to the Contractor's account. *5.9.8.3 One copy of all documents constituting the Contract shall be kept on the Site and be available for perusal by the Employer's Agent or any person authorised by him.* *5.9.8.4 The Contractor shall, in accordance with the Employer's Agent's instructions, maintain a register on the Site of all drawings and revisions thereof in the chronological order in which they are delivered to him."*
5.10	Delays attributable to the Employer	Add the following at the end of Clause 5.10.1: "*Notwithstanding anything to the contrary contained in the Contract, the Contractor shall not be entitled to claim if the Contractor would have in any event been delayed but for the Employer's conduct*."
5.11.2	Claims as a consequence of suspension	Add the following after "*the Contractor*," in the second line of Clause 5.11.2: "*or by reason of any contractor executing construction work, which is not in accordance with, the Contractor's Health and Safety Plan for the Site or which poses a threat to the health and safety of persons,*"
5.11.4	Inspection of the Works after suspension	Add the following new Clause 5.11.4: "*5.11.4.1. Prior to resuming work following a suspension, the Contractor and the Employer shall jointly inspect the portion of the Works affected by the suspension. The Contractor shall make good any deterioration or defect in or loss of the Works which has occurred during the suspension.* *5.11.4.2. Unless the suspension was by reason of some default or breach of the Contract by the Contractor, the Contractor shall be entitled to claim the proven remedial costs from the Employer. The*

Clause Ref.	Sub-Heading	Special Conditions
		Contractor shall thereafter without any delay resume with the Works"
5.12.1	Extension of the Time for Practical Completion	Delete the last sentence of Clause 5.12.1 and replace with the following: "*Such extension of time shall take into account any special non-working days and all relevant circumstances in respect of such claim. The Contractor shall not be entitled to make a claim if the Works would have in any event been delayed for reasons attributable to the Contractor*."
5.13.3	Interim milestone penalty	Add the following new Clause 5.13.3: "*Fifty per cent (50%) of the penalty as stated in the Contract Data (5.13) shall also be applicable should the Contractor fail to achieve the interim milestone dates as stated in Clause C3.5.1(a) (Management of the Works).*"
5.13.4	Cap on penalty for delay	Add the following new Clause 5.13.4: "*The penalties payable by the Contractor shall be limited to the amount stated in the Contract Data. Upon reaching the cap on the penalties payable by the Contractor, the Employer shall be entitled to terminate the Contract immediately on notice to the Contractor*".
5.14.1	Practical Completion	Amend the second sentence of the second paragraph of Clause 5.14.1 to read as follows: "*Should the Employer's Agent not issue such list within the 14 days, then the Contractor shall notify the Employer's Agent and the Employer. If the Employer's Agent or the Employer fail to respond to the Contactor's notice or issue the list of work required for Practical Completion within a further seven days, Practical Completion shall be deemed to be achieved at the expiry of the seven day period.*" The last paragraph is this Clause is deleted.

Clause Ref.	Sub-Heading	Special Conditions
5.14.2	Issue of Certificate of Practical Completion	In the second line of Clause 5.14.2, replace the words "*the Employer's Agent*" with the following: ", *the Contractor shall notify the Employer's Agent, who shall inspect the Works and the Employer's Agent*"
5.14.4	Certificate of Completion	Add the following at the end of Clause 15.14.4: *"However, a Certificate of Completion will not be issued before the Contractor hands over a consolidated Health and Safety file that shall include all the specified information."*
6.	**PAYMENT AND PAYMENT RELATED MATTERS**	
6.2.1	Delivery of Security	Add the following at the end of Clause 6.2.1: "*The security delivered by the Contractor shall be an unconditional, on-demand guarantee, provided by a bank or insurer approved by the Employer and in the form set out in Appendix 3 of the Contract."*
6.5.3	Details to be recorded	In the last sentence on Clause 6.5.3: Delete the first word "*If*" and replace with "*When*".
6.6.1	Provisional sums	In the first line of Clause 6.6.1.2.1 after the word "*sums*" and the fourth line of Clause 6.6.1.2.2 after the word "*amount*", insert the words "*excluding VAT*."
6.8.2	Application for contract price adjustment factor	In the second line of clause 6.8.2, insert "*VAT and*" after the word "*excluding*" in the parenthesis.
6.9.6	Waiver of Contractor's lien	Add the following new Clause 6.9.6 "*The Contractor and its subcontractor's waives, in favour of the Employer, any lien or right of retention that is or may be held in respect of the Works, Equipment, Plant and materials on the Site*"
6.10.2	Valuation of material bought on to Site	Amend Clause 6.10.2 by replacing the second sentence (commencing "*The valuation of such materials…*") with the following*:* "*The valuation of such materials shall be based on the purchase price and delivery cost reflected by the relevant invoices or receipts, exclusive of Value Added Tax and discounts to the Contractor and*

Clause Ref.	Sub-Heading	Special Conditions
		inclusive of any other duties payable on such material. (Value Added Tax will be added only to the nett amount certified by the Employer's Agent as payable to the Contractor in respect of each Payment Certificate, as provided for in Clause 6.10.1;"
6.10.3	Retention money	Add the following at the end of Clause 6.10.3: "*A retention guarantee may be provided in lieu of cash retention. The retention guarantee shall be to the value of stated in the Contract Data. The retention guarantee shall be issued by the Contractor at the Commencement Date of this Contract. The retention guarantee shall be returned to the Contractor within 14 days*."
6.11	Variations exceeding 15 per cent	In Clause 6.11, replace "*15 per cent*" in the heading, the marginal heading and in Clause 6.11.1.3 with "*20 per cent*".
7.	**QUALITY AND RELATED MATTERS**	
7.2.1	Quality of Plant, workmanship and materials	Clause 7.2.1 is renumbered as Clause 7.2.1.1 and the following new Clauses are added at the end of Clause 7.2.1: "*7.2.1.2.The onus rests with the Contractor to produce work which conforms in quality and accuracy of detail to all the requirements of the specifications and drawings, and the Contractor shall, at his own expense, institute a quality-control system and provide experienced personnel, together with all transport, instruments and equipment, to ensure adequate supervision and positive control of the works at all times*. *7.2.1.3 The Employer's Agent shall be entitled to audit any aspect of the Works.* *7.2.1.4 The details of all quality documents; test procedures and compliance documents must be submitted, five (5) days before each design and*

Clause Ref.	Sub-Heading	Special Conditions
		execution stage commences, to the Employer's Agent for information."
7.4.1	Samples of materials	Clause 7.4.1 is renumbered to Clause 7.4.1.1 and the following new Clauses are added at the end of Clause 7.4.1: "*7.4.1.2 The Contractor shall conduct tests or have them conducted continually on a regular basis, to check the properties of natural materials and processed natural materials and of products manufactured on site, such as concrete and asphalt. Although not a requirement for the Contractor to conduct regular tests on any commercially produced products such as cement, bitumen, steel and pipes, the Contractor shall remain fully responsible for any defective material or equipment provided by him.* *7.4.1.3 Similarly, the quality of all elements of the works shall be checked on a regular basis by the Employer's Agent and./or the Employer's Agent Representative so as to ensure compliance with the specified requirements. The intensity of control and of tests to be conducted by the Contractor in terms of these obligations is not specified but shall be adequate to ensure that proper control is being exercised to the satisfaction of the Employer's Agent The Contractor shall be fully responsible for any defective material or equipment provided, and any consequences thereof. Where any natural materials or products made from natural materials are supplied, upon completion of each element of the construction works, the Contractor shall test and check such materials, products and or elements for compliance with the specified requirements and shall submit his results to the Employer's Agent for approval. Such submission shall include all his measurements and test results*

Clause Ref.	Sub-Heading	Special Conditions
		and shall furnish adequate proof of compliance with the specified requirements."
7.6.3.3	Removal of improper work and materials	Add the following new Clause 7.6.3.3: "*To stop any contractor from executing construction work, which is not in accordance with, the Contractor's health and safety plan for the Site or which poses a threat to the health and safety of persons and to implement the required health and safety measures before continuing."*
8.3.1.4	Excepted risks	Add the following new Clause 8.3.1.4: "*Risk arising from political riot and malicious damage, unless these risks are insurable with the South African Special Risk Insurance Association at the time of tendering and it is stipulated in the Contract Data that the Contractor is to effect insurance against these risks*."
8.3.1.4.	Excepted risks	Add the following at the end of 8.3.1.4: *"Provided that all of the following conditions are satisfied:* *(a) The Contractor has engaged with the persons responsible for the strike, riot, commotion, disorder, violent demonstrations, sabotage other civil disturbance; has met with the relevant persons or leaders; and has recorded such relevant persons' or leaders' details, their grievances, the organisations involved, all threats made; and has requested the persons or leaders to cease all unlawful conduct;* *(b) The Contractor has obtained proof of the strike, riot, commotion,*

Clause Ref.	Sub-Heading	Special Conditions
		disorder, violent demonstrations, sabotage or other civil disturbance; *(c) The Contractor has reported all threats and unlawful conduct to the South African Police Service;* *(d) The Contractor has brought an urgent application to the court that correctly identifies and defines the unlawful conduct to be interdicted; and* *(e) The Contractor has ensured that the court order obtained pursuance to the urgent court application is enforced.*
8.4.1.1	Injury to persons and damage to property	Delete and replace with the following Clause 8.4.1.1: "*hereby indemnifies the Employer, the Employer's Agent and all consultants against any liability in respect of damage to or physical loss of the property of any person, including any employee of the Contractor, or injury to or death of any person, including any employee of the Contractor and*"
8.4.3	*Limitation of Liabilities*	Add the following new Clause 8.4.3: *"8.4.3.1 Neither Party shall be liable to the other Party for the loss of any Works, loss of profit, loss of any contract or for any indirect consequential loss or damage which may be suffered by the other Party in connection with the Contract.* *8.4.3.2 The Contractor's liability under the Contract shall be limited to the amount stated in the Contract Data.* *8.4.3.3 The following shall be excluded from the calculation of the limitation of liability: (a) any proceeds received from any project insurances*

Clause Ref.	Sub-Heading	Special Conditions
		required in terms of the Contract or any proceeds which would have been received from any project insurances but for the conduct of the Contractor; (b) delay and performance liquidated payable by the Contractor under the Contract; (c) all indemnities provided in the Contract; (d) retention monies; (e) any amounts paid to the Employer pursuant to the security provided under the Contract. *8.4.3.4 The Employer's liability shall be limited to the Contract Sum.* *8.4.3.5 This clause shall not be limit liability in any case of fraud, deliberate default or reckless misconduct by the defaulting Party*".
8.7	Early Warning Events	Add the following new Clause 8.7: "*8.7.1 In order to mitigate risk, the Employer and the Contractor require open and effective communication and co-operation to deal with events, circumstances or factors which may adversely affect the Works or the progress thereof, including any events, circumstances or factors which may delay the execution of the Works or increase the Contract Price, or otherwise adversely affect the Project or the Employer's operations on Site ("**Early Warning Event**").* *8.7.2 With a view to facilitating this, the Contractor shall notify the Employer of Early Warning Events by way of an Early Warning Event register ("**Risk Register**") which shall be maintained, updated and submitted by the Contractor to the Employer on a weekly basis. The Contractor shall co-ordinate weekly early warning meetings at the Site for the purpose of discussing Early Warning ("**Risk Reduction Meetings**").* *8.7.3 The Risk Reduction Meetings shall be attended by the Employer's Agent and the Contractor with the requisite expertise and authority*

Clause Ref.	Sub-Heading	Special Conditions
		to take decisions on behalf of the Parties at such meetings. *8.7.4 The updated Risk Register shall be submitted to the Employer at each such meeting.* *8.7.5 In each notice given in the Risk Register the Contractor shall provide: (a) detailed particulars of the event and the potential adverse effects; and (b) Proposals for the steps to be taken to mitigate the potential adverse effects thereof.* *In addition, either of the Parties shall be entitled, by written notice, to require the other Party to attend a Risk Reduction Meeting in respect of any Early Warning Event (whether or not notified by the Contractor).* *8.7.6 The purpose of the Risk Reduction Meeting is to raise and discuss Early Warning Events in a cooperative manner and to jointly make and consider proposals and seek solutions to mitigate the potential adverse effects thereof.* *8.7.7 The early warning notice and Risk Reduction Meeting contemplated in this Clause are intended as a risk management tool and open discussion is of paramount importance. To this end:* *8.7.7.1 notification in terms of this Sub-Clause shall not constitute notification of a claim for extension of time or additional cost pursuant to Clause 10.1 Extension of time for Practical Completion] or otherwise under the Contract (and to the extent that the Contractor wishes to give such notice in respect of a notified Early Warning Event he shall do so in a separate notice in accordance with the relevant provisions of the Contract; and* *8.7.7.2 unless otherwise specifically agreed in writing by the Employer and the Contractor from time to time nothing raised or agreed at any Risk Reduction Meeting shall limit or derogate from the*

Clause Ref.	Sub-Heading	Special Conditions
		rights and obligations of the Parties under the Contract. *8.7.8 If the Employer's Agent has notified the Contractor of his decision that the Contractor did not give an early warning which an experienced Contractor should have given, the claim shall be assessed as if the Contractor had given an early warning*."
9	**TERMINATION OF CONTRACT**	
9.1.1	Termination due to external events	In the second line of Clause 9.1.1, delete the words "*in any part of the world*" and replace with "*within the jurisdiction of the Site*".
9.1.4	Increased costs	The second paragraph of Clause 9.1.4 is amended to read as follows: "*Provided that the Contractor shall, as soon as any such increased Costs comes to his knowledge, and in any event no later than 14 days becoming aware of, or when the Contractor should have reasonably become aware of such increased Cost, notify the Employer's Agent thereof, in writing. The provisions of Clause 6.4 shall then apply, with the necessary changes*."
9.2.4	Termination for convenience	Add the following new Clause 9.2.4: "*Notwithstanding any other termination rights that the Employer may have under in terms of clause 9.2, the Employer may at any time, in its absolute discretion and without cause, terminate the Contract in whole or in part by giving 90 (ninety) days written notice to the Contractor of its intention to terminate. Subject to the Employer's rights under the Contract to deduct amounts owing to the Contractor in terms of clause 6.10.6, the Employer must pay the Contractor, as the Contractor's sole remedy in relation to the termination, all proven amounts due and unpaid for the Work completed at the date of termination.*

Clause Ref.	Sub-Heading	Special Conditions
10	**CLAIMS AND DISPUTES**	
10.5.1	Dispute resolution by standing adjudication	Add the following at the end of Clause 10.5.1: *"The member of the Adjudication Board shall be selected from the panel of Adjudication Board Members attached as Appendix 8* [*the Adjudication Board panel*]*."*
10.5.2	Dispute resolution by ad-hoc adjudication	Add the following at the end of Clause 10.5.2: *"The member of the Adjudication Board shall be selected from the panel of Adjudication Board Members attached as Appendix 8 [the Adjudication Board panel]."*
10.7.4	Urgent relief	Add the following new Clause 10.7.4: "*Nothing herein contained shall be deemed to prevent or prohibit a party to the arbitration from applying to the appropriate court for urgent relief or for judgment in relation to a liquidated claim*."
10.8	Court proceedings	Delete Clause 10.8 and replace with the words "[NOT USED]"
10.9.1	Appointment of dispute resolving person	Amend Clause 10.9 by deleting reference to "*the South African Institution of Civil Employer's Agenting*" and substituting with "*the Johannesburg Bar Council*".
10.10.1	Contractor's right to court proceedings	Delete Clause 10.10.1 and replace with the words "[NOT USED]"

Part one – Data provided by the *Employer*

The General Conditions of Contract make several references to the Contract Data for specific data, which together with the General and Special conditions collectively describe the risks, liabilities and obligations of the contracting parties and the procedures for the administration of the Contract. The Contract Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the general conditions of contract.

The General Conditions of Contract shall be read in conjunction with the variations, amendments and additions set out in the Contract Specific Data below. Each item of data given below is cross-referenced to the clause in the General Conditions of Contract to which it mainly applies.

The Contract Data and General Conditions of Contract shall have precedence over the Drawings, Scope of Work and Standardised Specifications in the interpretation of any ambiguity or inconsistency between these documents.

The following contract specific data, referring to the General Conditions of Contract for Construction Works, Third Edition, 2015, are applicable to this Contract:

Clause Reference	Contract Data	Specific Data
1.1.1.13	Defects Liability Period	12 Months
1.1.1.14	Due Completion Date	The time for achieving Practical Completion is **12 months**. Practical Completion: 30 September 2027 Final Completion: 30 September 2028 (end of defects liability)
1.1.1.15 and 1.2.1	Employer	The Employer is the Airports Company South Africa SOC Limited: Chief Dawid Stuurman International Airport, represented by the Airport Manager and/or such other person or persons duly authorised thereto by the Employer in writing Chief Dawid Stuurman International Airport

		Administrator Office Aeropark Office Complex, Block A Allister Miller Drive, Walmer Gqeberha South Africa
1.1.1.16	Employer's Agent	are ROMH Consulting acting through a director or an official duly authorised thereto in writing. **Address:** ROMH Consulting Leadwood House Cedar Square Bonza Bay Road Beacon Bay East London 5247
1.1.1.26	Pricing Strategy	The pricing Strategy is: • a Re-measurement Contract as defined in Clause 1.1.1.27
1.1.1.38	Contractor's Site Agents	TBC
1.3.2	Governing law	The law of the Republic of South Africa
1.3.3	Language	The language of the Contract is English
3.2.3	Specific approval of the Employer required	The Employer's Agent is required to obtain the specific approval of the Employer before executing any of the following functions or duties:

		• Clause 3.3.1 Nomination of Employer's Agent's Representative • Clause 3.3.4 Employer's Agent's authority to delegate • Clause 5.8.1 Non-working times • Clause 6.3 Variations • Clause 5.11.2 Suspension of the Works • Clause 5.12.1 Extension of Time for Practical Completion • Clause 5.12.4 Acceleration instead of extension of time.
5.1.1	Time calculations	Special non-working days include: • Saturdays, Sundays and gazetted public holidays in the Republic of South Africa; and • The annual builder's break, on which the contractor grants the majority of his permanent workforce leave around 15 December and the first Monday of the subsequent year (as defined by the South African Forum Civil Engineering Contractors).
5.2.1	Commencement of contract	07 July 2026
5.3.1	Commencement of the Works	The documentation required before commencement with the Works execution are:

		• Approved Health and Safety Plan in terms of the Occupational Health and Safety Act 85 of 1993: Construction Regulations (refer to Clause 4.3.1) and Construction permit • Initial Program (refer to Clause 5.6) • Security (refer to Clause 6.2) • Insurance (refer to Clause 8.6) • Contractor's cash flow projection
5.3.2	Unaccepted documentation	The time to submit the documentation required before commencement with Works execution is fourteen (14) days.
5.4	Access to site	The Contractor has a maximum of 3 months mobilisation period from the commencement of the contract to receiving access to site for which the construction works shall commence.
5.4.2	Access not exclusive	The access and possession of Site shall not be exclusive to the Contractor but as set out in the Site Information.
5.8.1	Non-working times	The non-working days are non-working nights as designated in clause B1204 of Part C3.6.1. Refer to the working hours as detailed in the Manual of Procedures for Working Airside.

5.13.1	Penalty for delay	(i) The penalty for failing to complete the Works is **R60 000,00** per calendar day. (ii) The penalty for failing to meet the taxiway or runway opening requirement is **R60 000,00** per occurrence and also any additional expenses as may result from the delay in opening the facility.
5.14.1	Practical Completion	The requirements for achieving Practical Completion of the Works are as follows:
5.16.3	Latent defects period	10 years after the issue of the Final Approval Certificate in terms of the Contract
6.2.1	Security	• Performance Bond • Retention Guarantee
6.3.10	Retention money	If a retention guarantee is provided in lieu of cash retention, then value of the retention guarantee shall be an amount equal to 5% of the Contract Sum including allowances for contingencies and Contract Price Adjustment.
6.5.1.2.3	Basis of payment for dayworks	The percentage allowances to cover the relevant charges is 10%.
6.8.2 and 6.8.3	Contract Price Adjustment	The Contract Price shall be subject to contract price adjustment in accordance with Clause 6.8 of the General Conditions of Contract.

		If special materials are specified in the Contract then the provisions of Clause 6.8.3 of the General Conditions of Contract shall apply to such special materials. Where applicable, in terms of the foregoing, the value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values: The value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values: x = 0.15 a = 0.15 b = 0.25 c = 0.50 d = 0.10 "L" is “Labour Index” and shall be the price index for “Consumer Price Index” for the area of Gqeberha, Eastern Cape, as published in the Statistical Release P0141, Table A, of Statistics South Africa. “E” is “Equipment Index” and shall be the price index for “Plant and Equipment”, as published in the Statistical Release P0151.1, Table 4, of Statistics South Africa.

		"M" is "Materials Index" and shall be the price index for the "Civil Engineering Material" product (Roads, General) as published in the Statistical Release P0151.1, Table 6, of Statistics South Africa. N.B. ***For electrical work:*** "Materials Index" and shall be the price index for the "Electrical engineering" product as published in the Statistical Release P0151.1, Table 5, of Statistics South Africa. "F" is "Fuel Index" and shall be the price index for "Coal and Petroleum Products", for "Diesel", as published in the Statistical Release P0142.1, Table 1, of Statistics South Africa. The base date for the purposes of calculating Contract Price Adjustment (CPA) shall be the month prior to the tender closing date. **NOTE:** The contract price adjustment factor shall be calculated to six decimal places.
6.10.1.5	Percentage of advance on materials not yet built into the Permanent Works	The percentage advance on materials not yet built into the Permanent Works is 80% upon proof of ownership. Payment to the Contractor for any materials on site shall only be authorized after proof of ownership by the Contractor has been lodged with the Employer's Agent in the form

		of receipted invoices or other acceptable documents.
6.10.3	Retention money	Notwithstanding the provision of a performance guarantee in terms of Clause 6.2.1, interim payments to the Contractors shall be subject to a retention by the Employer of an amount of 5% of the said amounts due to the Contractor. The limit of retention money is 5% of the Contract Price, including allowances for contingencies and Contract Price Adjustment. A guarantee in lieu of retention is permitted.
8.6.1	Insurance clause	See Insurance Schedule attached as Appendix 7. Should there be any discrepancy between the provisions of Clause 6.5 and Appendix 7, the provisions of Appendix 7 shall prevail in relation to any such matter.
8.6.1.1.2	Value of plant and materials supplied by the Employer to be included in the insurance sum	NIL
8.6.1.1.3	Amount to cover professional fees for repairing damage and loss to be included in insurance sum	**Refer to Insurance clauses**
8.6.1.3	Limit of indemnity for liability insurance	**Refer to Insurance clauses**

10.5.1	Adjudication	Dispute resolution shall be by ad-hoc adjudication
10.5.3	Number of Adjudication Board Members	One
10.7.1	Reference to arbitration	Disputes are to be referred for final settlement to arbitration

SIGNED at _____on _____Day of_____ 202___

For and on behalf of the **EMPLOYER**, duly authorised and warranting such authority

Full Name: _____

Capacity: _____

Witness: _____

SIGNED at _____on _____Day of_____ 202__

For and on behalf of the **CONTRACTOR**, duly authorised and warranting such authority

Full Name: _____

Capacity: _____

Witness: _____

Part two – Data provided by the *Contractor*

Clause 1.1.1.9:

The name of the Contractor is ……

Clause 1.2.1.2:

The address of the Contractor is

Physical Address: ……..…
……..……...
……..
Postal Address: ……..…
……...
……..……
Telephone: ……
……..……
……..
Fax: ……..……
……..
Email: ……..……

Clause 6.2.1 The security to be provided by the Contractor shall be one of the following:

TYPE OF SECURITY	CONTRACTOR'S CHOICE. INDICATE "YES" OR "NO"
Cash deposit of 10% of the Contract Sum (excluding VAT)	
Performance Guarantee of 10% of the Contract Sum (excluding VAT)	

Clause 6.8.3: Variation in the cost of special materials

SPECIAL MATERIALS		
Each material dealt with as a special material in terms of Clause 4.1 of the Contract Price Adjustment Schedule of the General Conditions of Contract is stated in the list below. The provisions of Subclause 6.8.3 of the General Conditions of Contract shall apply to such special materials. The rates and prices for the special materials shall be furnished by the tenderer, which rates and prices shall not include VAT but shall include all other obligatory taxes and levies.		
Special Material	**Source / Supplier**	**Rate or Price for the base month**
Bitumen		
35/50 Pen Bitumen (net bitumen content)	Confirmation letter on the suppliers' letterhead with company registration and address details	/ ton *
50/70 Pen Bitumen (net bitumen content)	Confirmation letter on the suppliers' letterhead with company registration and address details	/ ton *
70/100 Pen Bitumen (net bitumen content)	Confirmation letter on the suppliers' letterhead with company registration and address details	/ ton *
* Indicate whether the material will be delivered in bulk or in containers. This is to be the Oil Companies Industry Rate. (excluding VAT and discount, but including all other obligatory taxes and levies) When called upon to do so, the tenderer shall substantiate the above rates or prices with acceptable documentary evidence. No Special Materials are to be submitted unless clarified with Employer's Agent (See F.2.11 & F.2.12) Note: Fuel not to be include unless submitted as an alternative tender Change of supplier may be permitted but only upon application to the Engineer with the appropriate letters of supply in compliance to the relevant requirement note in the above table. Only net bitumen content of asphalt and bituminous products shall be subject to rise and fall and no account shall be taken of transport, emulsifiers, diluents or modifiers that may be supplied ex refinery or added later.		

SIGNED ON BEHALF OF TENDERER: . . . . . .

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED
CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

C1.3: PERFORMANCE GUARANTEE (PRO FORMA)

For use with the General Conditions of Contract for Construction Works, Third Edition, 2015.

GUARANTOR DETAILS AND DEFINITIONS

"Guarantor" means:.....

Physical address:.....

"Employer" means: .....

"Contractor "means: .....

"Employer's Agent" means: .....

"Works" means: .....

"Site" means: .....

"Contract" means: The Agreement made in terms of the Form of Offer and Acceptance and such amendments or additions to the Contract as may be agreed in writing between the parties.

"Contract Sum" means: The accepted amount inclusive of tax of R .....

Amount in words: .....

"Guaranteed Sum" means: The maximum aggregate amount of R .....

Amount in words: .....

Type of Performance Guarantee: *Fixed*

"Expiry Date" means: .....

CONTRACT DETAILS

Employer's Agent issues: Interim Payment Certificates, Final Payment Certificate and the Certificate Completion of the Works as defined in the Contract.

1. VARIABLE PERFORMANCE GUARANTEE

1.1. Where a Variable Performance Guarantee has been selected, the Guarantor's liability shall be limited during the following periods to diminishing amounts of the Guaranteed Sum as follows:

1.1.1. From and including the date of signing the Performance Guarantee up to and including the date of the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum: R……

(Amount in Words……..)

1.1.2. From the day following the date of the said interim payment certificate up to and including the Expiry Date, or the date of issue by the Employer's Agent of the Certificate of Completion of the Works, whichever occurs first: R……

(Amount in Words……..)

1.2. The Employer's Agent and/or the Employer shall advise the Guarantor in writing of the date on which the interim payment certificate certifying, for the first time, more than 50% of the Contract Sum, has been issued and the date on which the Certificate of Completion of the Works has been issued.

2. FIXED PERFORMANCE GUARANTEE

2.1. Where a Fixed Performance Guarantee has been selected, the Guarantor's liability shall be limited to the amount of the Guaranteed Sum.

2.2. The Guarantor's period of liability shall be from and including the date on which the Performance Guarantee is signed, up to and including the Expiry Date, or the date of issue by the Employer's Agent of the Certificate of Completion of the Works, or the date of payment in full of the Guaranteed Sum, whichever occurs first.

2.3. The Employer's Agent and/or Employer shall advise the Guarantor in writing of the date on which the Certificate of Completion has been issued.

3. CONDITIONS APPLICABLE TO VARIABLE AND FIXED PERFORMANCE GUARANTEES

3.1 The Guarantor hereby acknowledges that:

3.1.1 Any reference in this Performance Guarantee to the Contract is made for the purpose of convenience and shall not be construed as any intention whatsoever to create an accessory obligation or any intention whatsoever to create a suretyship;

3.1.2 Its obligation under this Performance Guarantee is restricted to the payment of money.

3.2 Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor hereby undertakes to pay the Employer the sum certified upon receipt of the documents identified in 3.2.1 to 3.2.3:

3.2.1 A copy of a first written demand issued by the Employer to the Contractor stating that payment of a sum certified by the Engineer in an Interim or Final Payment Certificate has not been made in terms of the Contract and failing such payment within seven (7) calendar days, the Employer intends to call upon the Guarantor to make payment in terms of 3.2.2;

3.2.2 A first written demand issued by the Employer to the Guarantor at the Guarantor's physical address with a copy to the Contractor stating that a period of seven (7) days has elapsed since the first written demand in terms of 3.2.1 and the sum certified has still not been paid;

3.2.3 A copy of the aforesaid payment certificate which entitles the Employer to receive payment in terms of the Contract of the sum certified in 3.2.

3.3 Subject to the Guarantor's maximum liability referred to in 1.1 or 2.1, the Guarantor undertakes to pay to the Employer the Guaranteed Sum or the full outstanding balance upon receipt of a first written demand from the Employer to the Guarantor at the Guarantor's physical address calling up this Performance Guarantee, such demand stating that:

3.3.1 The Contract has been terminated due to the Contractor's default and that this Performance Guarantee is called up in terms of 3.3; or

3.3.2 A provisional or final sequestration or liquidation court order has been granted against the Contractor and that the Performance Guarantee is called up in terms of 3.3; and

3.3.3 The aforesaid written demand is accompanied by a copy of the notice of termination and/or the provisional/final sequestration and/or the provisional liquidation court order.

3.4 It is recorded that the aggregate amount of payments required to be made by the Guarantor in terms of 4 and 5 shall not exceed the Guarantor's maximum liability in terms of 1.1 or 2.1.

3.5 Where the Guarantor has made payment in terms of 3.3, the Employer shall upon the date of issue of the Final Payment Certificate submit an expense account to the Guarantor showing how all monies received in terms of this Performance Guarantee have been expended and shall refund to the Guarantor any resulting surplus. All monies refunded to the Guarantor in terms of this Performance Guarantee shall bear interest at the prime overdraft rate of the Employer's bank compounded monthly and calculated from the date payment was made by the Guarantor to the Employer until the date of refund.

3.6 Payment by the Guarantor in terms of 3.2 or 3.3 shall be made within seven (7) calendar days upon receipt of the first written demand to the Guarantor.

3.7 Payment by the Guarantor in terms of 3.3 will only be made against the return of the original Performance Guarantee by the Employer.

3.8 The Employer shall have the absolute right to arrange his affairs with the Contractor in any manner which the Employer may deem fit and the Guarantor shall not have the right to claim his release from this Performance Guarantee on account of any conduct alleged to be prejudicial to the Guarantor.

3.9 The Guarantor chooses the physical address as stated above for the service of all notices for all purposes in connection herewith.

3.10 This Performance Guarantee is neither negotiable nor transferable and shall expire in terms of 1.1.2 or 2.2, where after no claims will be considered by the Guarantor. The original of this Guarantee shall be returned to the Guarantor after it has expired.

3.11 This Performance Guarantee, with the required demand notices in terms of 3.2 or 3.3, shall be regarded as a liquid document for the purposes of obtaining a court order.

3.12 Where this Performance Guarantee is issued in the Republic of South Africa the Guarantor hereby consents in terms of Section 45 of the Magistrate's Courts Act No 32 of 1944, as amended, to the jurisdiction of the Magistrate's Court of any district having jurisdiction in terms of Section 28 of the said Act, notwithstanding that the amount of the claim may exceed the jurisdiction of the Magistrate's Court.

Signed at: .....

Date: .....

Guarantor's signatory (1): .....

Capacity: .....

Guarantor's signatory (2): .....

Capacity: .....

Witness signatory (1): .....

Witness signatory (2): .....

C1.4: RETENTION MONEY GUARANTEE (PRO FORMA)

ISSUED TO ..... *[INSERT NAME OF EMPLOYER]* ..... (hereinafter called "the Employer")

ON BEHALF OF ..... *[INSERT NAME OF CONTRACTOR]* ..... (hereinafter called "the Contractor")

in connection with TENDER NO: ..... (hereinafter called "the Contract").

WHEREAS the Employer and the Contractor have agreed that the Contractor may provide a guarantee in lieu of the whole or a portion of the retention moneys provided for under the Contract;

NOW THEREFORE we, the undersigned, undertake, in accordance with the following provisions, to pay to the Employer such amounts as the Employer may, from time to time, demand from us.

1. Each demand by the Employer shall be in writing, signed by the Employer and delivered to us at ..... *[INSERT GUARANTOR'S FULL STREET ADDRESS]* ..... or such other address in ..... *[INSERT NAME OF COUNTRY]* ..... as we shall in writing notify to the Employer, and shall be accompanied by a certificate complying with Clause 2, signed by the Employer's Agent in office as such in terms of the Contract.

2. The Employer's Agent's certificate referred to in Clause 1 shall certify that:
   (a) the is the Employer's Agent in office as such in terms of the Contract,
   (b) the Contractor is in breach of his obligations under the Contract, and
   (c) the amount demanded, which amount the certificate shall specify, does not exceed
      (i) the amount of retention moneys which, but for this guarantee, would have been retained by the Employer in terms of the Contract at the date of the certificate, less the aggregate of the amounts of retention money actually retained by the Employer and the amounts previously paid by us to the Employer in terms hereof,
      (ii) a genuine estimate of the cost to the Employer of having the breach referred to in paragraph (b) remedied less the aggregate of any amounts withheld by the Employer

from payments due to the Contractor in terms of the Contract by reason of the breach referred to, and any amount of retention money actually held by the Employer save to the extent that the same had been deducted from any previous demand in terms hereof;

3. We shall within ..... days after our receipt of a demand complying with the provisions in Clauses 1 and 2 make payment to the Employer of the amount demanded at ..... *[INSERT EMPLOYER'S STREET ADDRESS]* ..... or at such other address in ..... *[INSERT EMPLOYER'S COUNTRY]* ..... as the Employer shall in writing notify to us.

4. Subject to compliance with the provisions hereof, our liability to make the payments herein referred to shall be unconditional and shall not be affected or diminished by any disputes, claims or counterclaims between the Employer and the Contractor.

5. Our aggregate liability under this guarantee is limited to .....*[INSERT AMOUNT OF GUARANTEE IN WORDS]* ..... (R*……..... [INSERT AMOUNT OF GUARANTEE IN FIGURES]*).

6. This guarantee shall expire on the date on which the last of the retention moneys, which but for this guarantee would have been retained by the Employer, becomes payable to the Contractor.

7. This guarantee is not transferable and must be produced for endorsement if any part payment is made and must be returned to us against final payment of our aggregate liability or on the date of the expiry of the guarantee in terms of Clause 6, whichever is the earlier.

Signed in the presence of the subscribing witnesses:

At .....for and on behalf of .....
.....
on this the ..... day of ..... 20.....
SIGNATURE : ……
CAPACITY : ……
ADDRESS : ……
: .....
: .....
AS WITNESSES : 1 ……
2 .....

C1.5: ADJUDICATOR'S AGREEMENT (Pro Forma Form)

This agreement is made on the ..... day of ..... between:

..... *[name of company/organisation]*
of .....
.....*[address]* and
..... *[name of company/organisation]*
of .....
.....*[address]*
(the Parties) and
.....*[name]*
of .....
.....*[address]*
(the Adjudicator).

Disputes or differences may arise/have arisen* between the Parties under a Contract dated ..... and known as .....
.....
and these disputes or differences shall be/have been* referred to adjudication in accordance with the CIDB Adjudication Procedure *[hereinafter called "the Procedure"],* and the Adjudicator may be or has been requested to act.

**Delete as necessary.*

IT IS NOW AGREED as follows:

1. The rights and obligations of the Adjudicator and the Parties shall be as set out in the Procedure.

2. The Adjudicator hereby accepts the appointment and agrees to conduct the adjudication in accordance with the Procedure.

3. The Parties bind themselves jointly and severally to pay the Adjudicator's fees and expenses in accordance with the Procedure as set out in the Contract Data.

4. The Parties and the Adjudicator shall at all times maintain the confidentiality of the adjudication and shall endeavour to ensure that anyone acting on their behalf or through them will do likewise, save with the consent of the other Parties which consent shall not be unreasonably refused.

5. The Adjudicator shall inform the Parties if he intends to destroy the documents which have been sent to him in relation to the adjudication and he shall retain documents for a further period at the request of either Party.

SIGNED BY: _____	SIGNED BY _____	SIGNED BY _____
Name:	Name:	Name:
who warrants that he/she is duly authorised to sign for and on behalf of the first Party in the presence of	who warrants that he/she is duly authorised to sign for on behalf of the second Party in the presence of	the Adjudicator in the presence of
Witness: _____	Witness: _____	Witness: _____
Name: _____	Name: _____	Name: _____
Address:	Address:	Address:
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Date: _____	Date: _____	Date: _____

Contract Data

1. The Adjudicator shall be paid at the hourly rate of R……. in respect of all time spent upon, or in connection with, the adjudication including time spent travelling.

2. The Adjudicator shall be reimbursed in respect of all disbursements properly made including, but not restricted to:

(a) Printing, reproduction and purchase of documents, drawings, maps, records and photographs
(b) Telegrams, telex, faxes and telephone calls
(c) Postage and similar delivery charges
(d) Travelling, hotel expenses and other similar disbursements
(e) Room charges
(f) Charges for legal or technical advice obtained in accordance with the Procedure.

3. The Adjudicator shall be paid an appointment fee of R…… This fee shall become payable in equal amounts by each Party within 14 days of the appointment of the Adjudicator, subject to an invoice being provided. This fee will be deducted from the final statement of any sums which shall become payable under item 1 and/or item 2 of the Contract Data. If the final statement is less than the appointment fee the balance shall be refunded to the Parties.

4. The Adjudicator is/is not* currently registered for VAT.

**Delete as necessary*

5. Where the Adjudicator is registered for VAT it shall be charged additionally in accordance with the rates current at the date of invoice.

6. All payments, other than the appointment fee (item 3) shall become due 7 days after receipt of invoice, thereafter interest shall be payable at 5% per annum above the Reserve Bank base rate for every day the amount remains outstanding.

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED SOC LIMITED
CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

C1.6: AGREEMENT IN TERMS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

THIS AGREEMENT made at .....
on this the ..... day of ..... in the year ……
between …… [hereinafter called "the Employer"] of the one part, herein represented by .....
in his capacity as .....
and .....
[hereinafter called "the Mandatary"] of the other part, herein represented by .....
.....
in his capacity as .....

WHEREAS the Employer is desirous that certain works be constructed, viz REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT and has accepted a Tender by the Mandatary for the construction, completion and maintenance of such Works and whereas the Employer and the Mandatary have agreed to certain arrangements and procedures to be followed in order to ensure compliance by the Mandatary with the provisions of the Occupational Health and Safety Act, 1993 (Act 85 of 1993);

NOW THEREFORE THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. The Mandatary shall execute the work in accordance with the Contract Documents pertaining to this Contract.

2. This Agreement shall hold good from its Commencement Date, which shall be the date of a written notice from the Employer or Employer's Agent requiring him to commence the execution of the Works, to either
   (a) the date of the Final Approval Certificate issued in terms of Clause 5.16.1 of the General Conditions of Contract *[hereinafter referred to as "the GCC"],* or
   (b) the date of termination of the Contract in terms of Clauses 9.1, 9.2 or 9.3.

3. The Mandatary declares himself to be conversant with the following:

   (a) All the requirements, regulations and standards of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993), hereinafter referred to as "The Act", together with its amendments and with special reference to the following sections of The Act:

      (i) Section 8 : General duties of employers to their employees;

      (ii) Section 9 : General duties of employers and self-employed persons to persons other than employees;

      (iii) Section 37 : Acts or omissions by employees or mandataries, and

      (iv) Subsection 37(2) relating to the purpose and meaning of this Agreement.

   (b) The procedures and safety rules of the Employer as pertaining to the Mandatary and to all his subcontractors.

4. In addition to the requirements of Clause 8.4 of the GCC and all relevant requirements of the Contract, the Mandatary agrees to execute all the Works forming part of this Contract and to operate and utilise all machinery, plant and equipment in accordance with the Act.

5. The Mandatary is responsible for the compliance with the Act by all his subcontractors, whether or not selected and/or approved by the Employer.

6. The Mandatary warrants that all his and his subcontractors' workmen are covered in terms of the Compensation for Occupational Injuries and Diseases Act, 1993 which cover shall remain in force whilst any such workmen are present on site. A letter of good standing from the Compensation Commissioner to this effect must be produced to the Employer upon signature of the agreement.

7. The Mandatary undertakes to ensure that he and/or subcontractors and/or their respective employers will at all times comply with the following conditions:

   (a) The Mandatory shall assume the responsibility in terms of Section 16.1 of the Occupational Health and Safety Act. The Mandatary shall not delegate any duty in terms of Section 16.2 of this Act without the prior written approval of the Employer. If the Mandatary obtains such approval and delegates any duty in terms of Section 16.2 a copy of such written delegation shall immediately be forwarded to the Employer.

   (b) All incidents referred to in the Occupational Health and Safety Act shall be reported by the Mandatory to the Department of Labour as well as to the Employer. The Employer will further be provided with copies of all written documentation relating to any incident.

(c) The Employer hereby obtains an interest in the issue of any formal inquiry conducted in terms of Section 32 of the Occupational Health and Safety Act into any incident involving the Mandatary and/or his employees and/or his subcontractors.

In witness thereof the parties hereto have set their signatures hereon in the presence of the subscribing witnesses:

SIGNED FOR AND ON BEHALF OF THE EMPLOYER: .....

WITNESS 1 ..... 2 .....

NAME 1 ..... 2 .....
(IN CAPITALS)

SIGNED FOR AND ON BEHALF OF THE MANDATARY: .....

WITNESS 1 ..... 2 .....

NAME 1 ..... 2 .....
(IN CAPITALS)

CERTIFICATE OF AUTHORITY FOR SIGNATORY TO AGREEMENT IN TERMS OF OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993)

The signatory for the company that is the Contractor in terms of the above-mentioned Contract and the Mandatary in terms of the above-mentioned Act shall confirm his or her authority thereto by attaching to this page a duly signed and dated copy of the relevant resolution of the Board of Directors.

An example is given below:

"By resolution of the Board of Directors passed at a meeting held on ..... 20……,

Mr/Ms ..... whose signature

appears below, has been duly authorised to sign the AGREEMENT in terms of THE OCCUPATIONAL

HEALTH AND SAFETY ACT, 1993 (ACT NO 85 OF 1993) on behalf of .....

.....

SIGNED ON BEHALF OF THE COMPANY : .....

IN HIS/HER CAPACITY AS : .....

DATE : .....

SIGNATURE OF SIGNATORY : .....

WITNESS: 1. ..... 2. .....

NAME (IN CAPITALS): 1. ..... 2. .....

C1.7: AVAILABILITY OF KEY PERSONS

I/W certify on the behalf of _____ that
(Print Name of Tender)
in line with the technical evaluation section of the tender data, we affirm our commitment to maintain the following key personnel throughout the duration of the project:

(a) **Contracts Manager**

The Contracts Manager must:

1. have an active professional registration with the Engineering Council of South Africa (ECSA) as a Professional Engineer (PrEng) or a Professional Engineering Technologist (PrEngTech) **OR** have an active professional registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Manager (PrCM) or a Professional Construction Project Manager (PrCPM).
2. have completed a minimum of three relevant projects with a minimum construction value of R30million (Ex VAT).
3. This information will be verified by the client prior to the approval of the key personnel.

(b) **Construction Manager**

The Construction Manager must:

1. have an active professional registration with the Engineering Council of South Africa (ECSA) as a Professional Engineer (PrEng) or a Professional Engineering Technologist (PrEngTech) or a Professional Engineering Technician (PrEngTechni) **or** have an active professional registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Manager (PrCM) or a Professional Construction Project Manager (PrCPM).
2. have completed a minimum of three **relevant** projects with a minimum construction value of R30 million (Ex VAT).
3. This information will be verified by the client prior to the approval of the key personnel.
4. Will solely focused on this project and be based full time on site for the duration of construction works.

(c) **Construction Health and Safety Officer**

The Construction Health and Safety Officer must

1. have an active professional registration with the South African Council for the Project and Construction Management Professions (SACPCMP) as a Professional Construction Health and Safety Officer (PrCHSO)

2. have completed a minimum of three projects with of any amount in the built environment
3. This information will be verified by the client prior to the approval of the key personnel.
4. Will solely focused on this project and be based full time on site for the duration of construction works.

(d) **Additional conditions to be met:**

1.1) The Contractor should appoint an **Asphalt Supervisor** (Construction work supervisor) who has completed at least 3 asphalt road projects.

(e) **Relevant project definition**

"Relevant/ Similar": *Any road-related projects (i.e., Runways, Taxiways, Highways etc). Gravel roads are excluded unless the gravel road is being upgraded into a surfaced road. Routine road maintenance will also be excluded.*

Signed	----------	Date	----------
Name	----------	Position	----------
Tender	----------		

C1.8: DISCLOSURE STATEMENT

For use with the General Conditions of Contract for Construction Works, Third Edition, 2015.

Dear Sirs

1. I hereby confirm that I am willing and available to serve as an Adjudication Board Member in the above mentioned Contract. In accordance with the General Conditions of Contract for Construction Works Adjudication Board Rules relating to disclosure statements by selected or nominated persons to the adjudication, I hereby state that:

    1.1. I shall act with complete impartiality and know of nothing at this time, which could affect my impartiality.

    1.2. I am not currently employed by the Contractor, Employer or Employer's Agent.

    1.3. I do not have or have not had a personal relationship with any authoritative member of the Contractor, Employer or the Employer's Agent which could affect my impartiality.

    1.4. I undertake to immediately disclose to the parties any changes in the above position which could affect my impartiality or be perceived to affect same.

2. Should there be any deviation from the foregoing statements, details shall be given. I further declare that I am experienced in the work which is carried out under the Contract and in interpreting contract documentation.

SIGNED at _____on _____Day of_____ 202__

For and on behalf of the **ADJUDICATION BOARD MEMBER**, duly authorised and warranting such authority

Full Name: _____

C1.9: INSURANCE SCHEDULE

INSURANCE CLAUSES FOR AIRSIDE CONSTRUCTION CONTRACTS WHERE THE AWARDED CONTRACT VALUE DOES NOT EXCEED R150 MILLION, AND THE CONSTRUCTION PERIOD DOES NOT EXCEED 36 MONTHS, AND THE DEFECTS LIABILITY PERIOD DOES NOT EXCEED 24 MONTHS

Each Party shall be responsible for effecting and maintaining the relevant insurances as specified below and to the extent relevant to the Contract.

1. Insurance Effected By The Employer (Principle Controlled Insurance ("PCI"))

1.1 Notwithstanding anything elsewhere contained in this Contract and without limiting the obligations, liabilities or responsibilities of the Contractor in anyway whatsoever (including but not limited to any requirement for the provision by the Contractor of any other insurances) the **Employer** shall effect and maintain for the duration of the construction and maintenance periods of the Contract - as appropriate in the joint names of the Employer, the Contractor and where relevant Sub-Contractors the following insurances which are subject to the terms, limits, exceptions and conditions of the Policy:

a) Contract Works/Contractors Public Liability/ Removal Of Lateral Support Liability

Section 1 Of The Policy – Contract Works

Contract Works Insurance for the full value of the Works to provide cover against accidental physical loss of or damage to the Works, Temporary Works and materials intended for incorporation in the Works all being the subject matter of this Contract including to the extent provided for in the policy whilst in transit or temporarily stored at any premises en route to or from the Site (other than where this is a continuation of Marine Transit) within the territorial limits of the policy.

This insurance may specifically exclude any cost necessary to replace or rectify any of the property insured, which is in a defective condition due to defect in design, plan specification, material or workmanship.

This insurance contains the following limitations and warrantees ;

Open Trench Limitation

In respect of loss or damage to open trenches and pipes, conduits or cables laid therein, caused directly or indirectly by rain, inundation or flood, Insurers liability shall be limited in respect of the aggregate length of open trenches at any one time to 2,500 meters.

Exposed Layer Works (applicable to works involving paving, roadways, bulk earthworks and runways and taxiways)
In respect of loss or damage to Exposed Layer Works relating to paving, roadways and runways (including taxiways) caused directly or indirectly by rain, inundation or flood, Insurers liability shall be limited in respect of the aggregate length of Exposed Layer Works at any one time to 2,500 meters.

Section II of the Policy – Contractors Public Liability

Public Liability Insurance which provides indemnity against legal liability in the event of accidental death of or injury to persons and/or loss of or damage to property(other than the Works the subject matter of this Contract) arising from the execution of the Contract with a limit of indemnity of **R100,000,000** in respect of any one occurrence or series of occurrences consequent on or attributable to one source or original cause.

Section III of the Policy – Removal Of Lateral Support Liability

Removal Of Lateral Support Liability which provides indemnity against legal liability in the event of accidental death of or injury to persons and/or loss of or damage to property (other than the Works the subject matter of this Contract) arising out of or in connection with shock or vibration or the removal or weakening of or interference with support to property in the vicinity of the Contract Site and arising out of or in connection with the Insured Contract (but not in respect of tunneling works) and occurring during the Period of Insurance.

The Limit of Indemnity being limited to R50,000,000 attributable to one source or original cause

b. **Contract Works SASRIA** – Providing physical loss of or damage to the Works, Temporary Works and materials intended for incorporation in the Works as covered by the underlying Contract Works policy as noted in (a) above due to perils as covered in terms of the SASRIA Contract Works wording as issued by SASRIA SOC.

The Contract Works SASRIA cover excludes consequential or indirect loss or damage of any kind or description whatsoever.

The SASRIA Contract Works policy is limited to **R500,000,000 (Incl VAT)** in the aggregate during the policy period of insurance.

The Contract Works SASRIA policy wording can be obtained from the SASRIA website http://www.sasria.co.za/ which notes the covers and policy exclusions.

c) **Aviation Liability Insurance** which provides indemnity against legal liability in the event of accidental death of or injury to persons and/or loss of or damage to property (other than the Works the subject matter of this Contract) arising from the execution of the Contract with a limit of indemnity of **R2,000,000,000** in respect of any one occurrence or series of occurrences consequent on or to one source or original cause.

This insurance is in respect of liability relating to aircrafts.

d) **Design & Construct Professional Indemnity Insurance** which provides indemnity against legal liability to pay compensation as a result of any actual or alleged negligent act, error or omission in the performance of the Professional Duties of the insured and arising from the execution of this project. The limit of indemnity under this insurance shall be ***R25,000,000 in the aggregate during the annual policy period of insurance that ACSA effect such cover during the policy period from 1 April to 31 March during each policy period of insurance.**

****The limits of indemnity applies to all ACSA contracts as a whole and does not apply specifically to this contract. The aggregate limit could be exhausted by claims under other ACSA contracts and there is no guarantee that this insurance cover will provide sufficient cover to this specific contract should the aggregate limit be exhausted.***

The Policy only covers the rectification of the works and excludes all consequential losses.

Professional Duties do not include:

a) Labour and construction work which would normally be the responsibility of the building or engineering contractor.

b) Supervision of the construction works usually undertaken by a building or engineering contractor.

1. 2 The **Contractor** shall familiarise itself fully with the details of such insurance effected by the Employer. The Contractor shall comply to all the terms and conditions of the Employer arranged policies and the Contractor shall be deemed to be fully aware of all the conditions, limits, limitations, exclusions/exceptions and deductibles that are contained in the Employer arranged policies. Copies of the Employer arranged policies are obtainable on request from the Employer and if the Contractor is of the opinion that additional insurance is required, such shall be for the Contractors account.

1.3 The Employer shall pay the premium in connection with the insurances effected by the Employer. The Employer is entitled to all return premiums, dividends, discounts, or adjustments in connection with the insurances effected by the Employer.

1.4 The Contractor shall not include any premium charges for this insurance except to the extent, which he may deem necessary in his own interests to effect supplementary insurance to the insurance effected by the Employer. The Employer reserves the right to call for full information regarding insurance costs included by the Contractor.

In the event that the Contractor purchases any insurances in addition to those indicated above, the premium and taxes, duties, etc. shall be borne entirely by the contractor.

1.5 Any further clarification of the scope of cover provided by the Policies arranged by the Employer should be obtained from the Employer.

1.6 The Contractor and/or any other party who obtains indemnity under the policies effected under 1.1 shall become liable for the deductibles (first amount payable) which are applicable in respect of each and every occurrence or series of occurrences attributable to one source or cause giving rise to loss or damage or indemnifiable liability. The deductibles applicable to the policies effected under 1.1 are as follows:

a) Contract Works/Contractors Public Liability/ Removal Of Lateral Support Liability

Unless stated otherwise in the Policy Extensions the Deductibles shall be as follows which will apply in respect of each and every occurrence or series of occurrences arising out of or in connection with any one event giving rise to loss or damage:

Section 1 Of The Policy – Contract Works

In respect of all loss or damage **R150,000** but increased to **R250,000** in respect of loss or damage arising out of or in connection with testing and commissioning.

Section 2 Of The Policy – Contractors Public Liability

R75,000 each and every claim in respect of Property Damage.

Section 3 Of The Policy – Removal Of Lateral Support Liability

R75,000 each and every claim.

b) Contract Works SASRIA

In respect of theft as a result of the SASRIA perils insured - **R25,000** each and every occurrence .

c) Aviation Liability Insurance ;

In respect of each and every loss or damage or injury – **R300 000.**

d) Design & Construct Professional Indemnity Insurance

a) In respect of contracts under R50 million at award – **R5,000,000.**
b) **In respect of contracts over R50 million at award – R10,000,000**

1.7 In the event of any occurrence which is likely to give rise to a claim under the insurance arranged by the Employer, the Contractor shall:

a) In addition to any statutory requirement or other requirements contained in the Contract immediately notify the Employer and the Employer's Insurance Brokers by telephone, mobile phone or email giving the circumstances, nature and an estimate of the loss or damage or liability. The Contractor must also complete the Claim Advice Form (Appendix "A").

The following persons/insurers must be advised immediately on the occurrence of a claim on site or even a possibility of a claim arising due to an incident occurring on site:

Airports Company South Africa :

Nokulunga Masiza

Tel: +27 (0)11 723 1400

M: +27 (0)79 512 0532

Nokulunga.Masiza@airports.co.za

Buhle Mnguni

D: +27 (0)11 723 1400
M: +27 (0)74 535 9075

Buhle.Mnguni@airports.co.za

b) Preserve damage and make it available for inspection by a representative of the Insurers.

c) Wherever possible, photographs of damage should be taken.

d) Inform the police authorities promptly in the event of loss or damage by theft, burglary or any malicious persons(s) for the purpose of recovering any property so lost, discovering the guilty person or persons, and having him, her or them duly prosecuted.

e) Advise the Insurers of any other insurance(s) which may cover the same loss, damage or injury, or any part thereof.

f) Give to the Insurers every assistance to enable the Insurers to settle or resist any claim against the Insured, or institute any proceedings;

g) On completion the Claims Advice Form, the form must be sent to the Employers Insurance Brokers for further action (the original may be emailed to the Employers Insurance Broker). (Please do not remove the Claims Advice Form out of this document. Rather photocopy the form and send the copy to the Employers Insurance Brokers).

h) The Employer and the employers Insurance brokers / Insurers or their appointed loss adjusters shall have the right to make all and any enquiry's on the Site of the Works or elsewhere as to the cause and results of any such occurrence and the Contractor shall cooperate in carrying out such enquiry's.

i) The Contractor, Project Managers and Consultants must allow free access to Insurers' assessors for the purpose of investigating and assessing the loss or damage.

j) **The Contractor must not proceed with the making good any off the loss without the prior authorisation of the Insurers.**

k) The Contractor must keep separate records of the costs involved in making good any loss or damage and these records should be available at all times for inspection by Insurers. Such records should include inter alia the entire cost of labour, materials, transport and equipment.

l) Where required by the Employer, negotiate the settlement of claims with the Insurer or their appointed loss adjusters through the Employer's Insurance Brokers and shall obtain the Employer's approval of such settlement.

m) Once the amount of a claim is agreed by the Insurers and the Contractor, an "Agreement of Loss" form must be signed by the Contractor and if required this shall be counter signed by the Employer or the Project Managers.

n) The proceeds of such claim will, if required by the Employer, be paid net of any Deductible applicable under the policy by the Insurers to the Employer who on receipt thereof will arrange for payment to be made in terms of the Conditions of Contract. In the event that it is agreed by the Employer that such claims payment be made directly to the Contractor, the Contractor shall arrange for the Employer to endorse the "Agreement of Loss" to this effect.

2. Insurance Effected by the Contractor.

In addition to Clause 1.1 in respect of the insurances effected by the Employer the following Insurances to be effected by the Contractor :

2.1 Without limiting the Contractor's obligations, responsibilities and liabilities, the Contractor and Sub-contractor shall maintain at the Contractor's and Subcontractor's expense and where applicable provide as a minimum the following insurances:

a) **Insurance of Construction Plant and Equipment** (including tools offices and other temporary structures and contents) and other things (except those intended for incorporation into the Works) brought onto the site for a sum sufficient to provide for their replacement.

The Employer shall be named as additional insured and a waiver of subrogation shall be provided to the Employer.

b) **Contractor's Common Law Liability/ Worker's Compensation Insurance**

The Contractor shall take out and maintain employer's liability insurance with a limit of indemnity of not less than **R20,000,000** and/or workmen's compensation insurance covering personal injury to or death of the employees of the Contractor engaged in connection with the Works to the minimum value required by applicable law.

The Contractor shall procure that its Subcontractors take out and maintain similar insurance in respect of its Subcontractor's personnel performing the Works.
In the event that a claim is made against the Employer in connection with such insurance, the Contractor shall indemnify and hold harmless the Employer against any such claim. The Employer shall be named as additional insured and a waiver of subrogation shall be provided to the Employer.

c) **Motor Vehicle Liability Insurance** comprising (as a minimum) "Balance of Third Party" Risks including Passenger Liability indemnity with a limit of indemnity of not less than **R5 000 000** for all owned, non-owned, leased and hired vehicles.

d) **Insurance For Buy-Down Cover Of Employer's Deductibles**

Should the Contractor believe that the Employer effected Contract Works, Public Liability and Design & Construct Professional Indemnity deductibles as noted in Clause 1.6 (a),(c) and (d) be considered to be unacceptable to the Contractor, then the Contractor must obtain Buy Down cover for these deductibles to a deductible considered by the Contractor as being acceptable in respect of the works being undertaken.

e) Where the Contract involves manufacturing and/or fabrication of the Works or parts thereof at premises other than at the Contract Site the Contractor shall satisfy the Employer that all materials and equipment for incorporation in the Works are adequately insured during manufacture and/or fabrication. In the event of the Employer having an insurable interest in such Works during manufacture or fabrication then such interest shall be noted by endorsement to the relevant Policies of Insurance.

Such insurance shall name Employer as an additional insured, and shall be primary to any insurance maintained by the Employer.

f) **Public Liability** insurances in excess of the Employers Public Liability insurances as stated under clause 1.1(a).

g) **Aviation Liability** insurances in excess of the Employers Aviation Liability insurances as stated under clause 1.1(c).

h) **Contractor's Professional Indemnity Insurance** in excess of the Employers Design & Construct Professional Indemnity insurances as stated under clause 1.1(d) and if applicable to cover the deductible that applies to the Employer effected insurance.

i) **Marine Cargo Insurance (If Applicable)**

Cover : Imports of cargo, equipment, goods, plant, machinery and materials ("**Insured Property**") to the site where the Permanent Works will be constructed.

Sum Insured: Not less than the value of the largest single cargo shipment, conveyance or the value in storage, whichever is the greater (CIF plus 10%).

Marine / Air Cargo Insurance covering the Insured Property against all risks of physical loss or damage while in transit by land, sea or air from country of origin anywhere in the world to the site where the Permanent Works will be constructed including loading, or vice versa, from the commencement of the time the insured items are loaded prior leaving the warehouse or factory for shipment to the said site.

The insured parties are the Employer, the Contractor and its Subcontractors, and all their personnel involved in the execution of any Works on the construction site.

j) **Miscellaneous Insurance**

Other insurance as is customary, desirable or necessary to comply with applicable Laws in the Country.

2.2 The insurances to be provided by the Contractor and his Sub-contractor shall be effected with Insurers and on terms approved by the Employer (which approval shall not be unreasonably withheld) and shall be maintained in force for the duration required (including any period of maintenance/defects liability period). The Contractor shall within twenty eight (28) days of commencement of the contract produce to the Employer the relevant Policy or Policies of Insurance.

2.3 In the event that the Contractor or his Sub-contractor receives any notice of cancellation or restrictive modification to the insurance provided to them they shall immediately notify the Employer in writing of such cancellation or restriction and shall advise what action the Contractor or his Sub-contractor will take to remedy such action.

If the Contractor fails to effect and keep in force the insurances referred to then the Employer may effect and keep in force any such insurances and pay such premium or premiums as may be necessary for that purpose and from time to time deduct the amount paid by the Employer from any monies due or which may become due to the Contractor or recover same as a debt from the Contractor.

2.4 **Sub-Contractors.**

The Contractor shall:

a) ensure that all potential and appointed Sub-contractors are aware of the whole contents of these Insurance Clauses, and

b) enforce the compliance by sub contract agreement between the Contractor and SubContractor and where applicable that the Sub Contractor effect similar insurance relating to the insurances required to be effected by the Contractor under Clause 2 (Contractor effected insurances).

APPENDIX A

CONTRACTORS CLAIMS ADVICE FORM - FOR ACSA INSURED CONTRACTS UNDER THE ANNUAL POLICY

Send to : Airports Company South Africa

***** .....
.....
.....
.....
.....
.....

E-Mail The Following People :

Nokulunga.Masiza@airports.co.za

Buhle.Mnguni@airports.co.za

***** (Please provide name of contracting company, site address, telephone numbers and e-mail address).

RE :ACSA CONTRACTORS : CAR/PL/PI : CLAIM

Date of loss : _____

Reported to site agent by : _____ Date : _____

Reported to Insurance Broker by : _____ Date : _____

Locality of Incident _____

_____

How did the loss occur (cause) ? _____

_____

_____

Details and nature of loss or damage to Contract Works _____

_____

_____

Details of other property damaged _____

_____

Names and address of witnesses _____

Estimated cost of repairs (Separate records of all costs must be kept) R_____ Person whom assessor should contact _____

Telephone/Mobile Numbers Of Contact Person_____

Email Address of Contact Person_____

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C1.10: ACSA ADJUDICATION BOARD PANEL

For use with the General Conditions of Contract for Construction Works, Third Edition, 2015.

One of the following potential Adjudication Board Members shall be appointed in terms of the Contract as and when a dispute arises or at the beginning of the Contract.

Potential Adjudicator	Email Address	Chambers
Adv. Mkhululi Duncan Stubbs	duncan.stubbs@gmail.com	Thulamela Chambers
Adv. Arzhar Bham SC	bhamae@law.co.za	Victoria Mxenge
Adv. Mohhamed Chohan SC	chohann@counsel.co.za	Group One
Adv. Benny Makola	benny.makola@gmail.com	Group 621
Adv. Vincent Maleka SC	ivmaleka@mweb.co.za	Thulamela Chambers
Adv. Chris Loxton SC	loxton@counsel.co.za	Group One

PART C2: PRICING DATA

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

PROJECT No: 4429

Contents:	**No of pages**
C2.1 Pricing Instructions	[●]
C2.2 Bills of Quantity	[●]

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED
CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

PART C2: PRICING DATA

C2.1 PRICING INSTRUCTIONS

1. Measurement and payment shall be in accordance with the relevant provisions of the COTO Standard Specifications for Road and Bridge Works for South African Road Authorities (2020 edition) as amended in the Scope of Works.

2. The units of measurement described in these Bills of Quantities are metric units. Abbreviations used in these Bills of Quantities/ Pricing Schedule are as follows:

%	=	percent
h	=	hour
ha	=	hectare
kg	=	kilogram
kl	=	kilolitre
km	=	kilometre
km-pass	=	kilometre-pass
kPa	=	kilopascal
kW	=	kilowatt
l	=	litre
m	=	metre
mm	=	millimetre
m^2	=	square metre
m^2-pass	=	square metre-pass
m^3	=	cubic metre
m^3-km	=	cubic metre-kilometre
MN	=	meganewton
MN.m	=	meganewton-metre
MPa	=	megapascal
No.	=	number of
Prov sum	=	Provisional sum
PC Sum	=	Prime Cost sum
R/only	=	Rate only

sum	=	lump sum
t	=	ton (1000kg)
W/day	=	Work day

3. For the purpose of these Bills of Quantities/ Pricing Schedule, the following words shall have the meanings hereby assigned to them:

Unit:	The unit of measurement for each item of work as defined in the The COTO Standard Specifications for Road and Bridge Works for South African Road Authorities (2020 edition).
Quantity:	The number of units of work for each item.
Rate:	The agreed payment per unit of measurement (which the service provider tenders).
Amount:	The product of the quantity and the agreed rate for an item.
Lump sum:	An agreed amount for an item, the extent of which is described in the Bills of Quantities/ Pricing Schedule but the quantity of work of which is not measured in any units.

4. Unless otherwise stated, items are measured net in accordance with the drawings, and no allowance is made for waste.

5. It will be assumed that prices included in the Bills of Quantities/ Pricing Schedule are based on Acts, Ordinances, Regulations, By-laws, International Standards and National Standards that were published 28 days before the closing date for tenders. (Refer to www.sabs.co.za, or www.iso.org etc. for information on standards)

6. The prices and rates in these Bills of Quantities/ Pricing Schedule are fully inclusive prices for the work described under the items. Such prices and rates cover all costs and expenses that may be required in and for the execution of the work described in accordance with the provisions of the Scope of Work, and shall cover the cost of all general risks, liabilities, and obligations set forth or implied in the Contract Data, as well as overhead charges and profit. These prices will be used as a basis for assessment of payment for additional work that may have to be carried out.

7. Where the Scope of Work requires detailed drawings and designs or other information to be provided, all costs associated therewith are deemed to have been provided for and included in the unit rates and sum amount tendered such items.

8. An item against which no price is entered will be considered to be covered by the other prices or rates in the Bills of Quantities/ Pricing Schedule . A single lump sum will apply should a number of items be grouped together for pricing purposes.

9. The quantities set out in these Bills of Quantities/ Pricing Schedule are approximate and do not necessarily represent the actual amount of work to be done. The quantities of work accepted and certified for payment will be used for determining payments due and not the quantities given in these Bills of Quantities.

10. Reasonable compensation will be received where no pay item appears in the Bills of Quantities/ Pricing Schedule in respect of work required in terms of the Contract and which is not covered in any other pay item.

11. The short descriptions of the items of payment given in these Bills of Quantities/ Pricing Schedule are only for the purposes of identifying the items. More details regarding the extent of the work entailed under each item appear in the Scope of Work. **N.B. Some of these are already detailed in the Bills of Quantities/ Pricing Schedule and were thus not repeated in the pricing schedule.**

12. The item numbers appearing in the Bills of Quantities/ Pricing Schedule refer to the corresponding item numbers in the The COTO Standard Specifications for Road and Bridge Works for South African Road Authorities (2020 edition). Where a standard COTO payitem is amended or a new payitem added, the item number is preceded by the letter “P” in the Pricing Schedule.

13. The Bills of Quantities/ Pricing Schedule are provided electronically. **The tenderer should price using Excel to allow automatic summation of values due to the formulas provided**. A printout of the entire completed pricing schedule must be signed and scanned and saved in .pdf format. For all addenda issued relating to the Bills of Quantities/ Pricing Schedule, the item numbers, description and quantities of the issued document will govern.

13. The contractor shall determine the contract skills participation goals, expressed in Rand, which shall not be less than the contract amount multiplied by a percentage factor given in Table 2 in the Standard for the applicable class of construction works. This is indicated by the percentage factor in the Final Tender Summary section. Minimum Contract Skills Development Goal (CSDG) sum = Civil Engineering CE (0.25%) x Subtotal of the tender amount

C2.2 BILLS OF QUANTITY

Remuneration for Services

The Tenderer is expected to provide a team of Representatives who are suitably qualified and competent to carry out the duties as outlined in the Scope of work, Part C3 and the RFP document.

N.B Refer to Excel file for the pricing schedule. Pricing to be done using the excel file.

C2.2.1 Pricing Schedule

Note to tenderer: How to use the pricing schedule

- *A Bill of Quantities has been prepared for all pricing purposes for the construction Works.*
- *Bidders are to thoroughly read the description of each item to ensure the rates provided are adequate as per the requirements.*
- *Bidders are to further refer to the Scope of Work (Part C3) section of this contract and COTO to ensure consistency in the understanding of the cost estimating requirements for the bidding process.*
- *Only Populate yellow cells.*
- *Provisional Sums and Prime costs (Sums) will be highlighted in Blue.*

Schedule A: Runway and Taxiways Works

Schedule B: Electrical Works

C.2.2.2 Summary of Pricing Schedule

Schedule A: Runway and Taxiways Works	R……
Schedule B: Electrical Works	R……
Subtotal A (Schedule A + Schedule B)	R……
Contract Skills Development Goal (CSDG: 0.25% of Subtotal A)	R……
Escalations (8% of Subtotal A)	R……
Subtotal B (Subtotal A + Escalations + CSDG)	R……

Contingencies (10% of Subtotal B)	R……
Subtotal C (Subtotal B + Contingencies)	R……
Value Added Tax (VAT) (15% of Subtotal C)	R……
Overall Total (Subtotal C + VAT)	**R……**

Overall Total to be carried to the Form of Offer.

N.B. Refer to Excel file for the summary of the pricing schedule. The summation of the pricing will be done automatically. The total is to be carried to the Form of Offer.

BIDDERS ARE TO REFER TO AND USE THE EXCEL SHEETS FOR ALL PRICING PURPOSES

PART C3: SCOPE OF WORKS

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

PROJECT No: 4429

Contents:	**No of pages**

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PART C3: SCOPE OF WORKS

C3.1: DESCRIPTION OF THE WORKS

C3.1.1 EMPLOYER'S OBJECTIVES

The project is located at Chief Dawid Stuurman International Airport (CDSIA). The purpose of the project is to undertake the rehabilitation of Runway 08/26, Taxiways Alpha, Bravo, Charlie and Echo, and the General Aviation (GA) apron pavements to restore structural capacity, improve operational safety, and ensure compliance with ICAO Annex 14 and ACSA pavement and lighting standards. The project aims to address ageing pavement layers, surfacing defects, drainage deficiencies, and lighting non-compliances that have developed over more than 15 years since the last major rehabilitation.

C3.1.2 OVERVIEW OF THE WORKS

The work to be performed under this contract comprises mainly the rehabilitation of runway 08-26, including taxiways and general aviation areas at Chief Dawid Stuurman International Airport.

The following aspects will be addressed in this project:

The envisaged scope of works entails the mill-and-replace rehabilitation of the primary runway (08/26), taxiways Alpha, Bravo, Charlie and Echo, and the rehabilitation of the GA (General Aviation) pavements. The works also include the assessment and correction of airfield ground lighting (AGL), localised drainage upgrades, and full runway and taxiway markings.

The rehabilitation zones cover the full runway length of 2 160 m and width of 46m, and the taxiway network of approximately 3 km in length and 22.5m in width (with taxiway A3 being 7.3m wide), as well as the GA apron area. The proposed civil works areas are illustrated in the following section, where the runway and taxiway pavement rehabilitation segments are demarcated for intervention.

Runway 08/26

The scope of work on Runway 08/26 is summarised in Table 0-1.

Table 0-1 Summarised RWY08/26 works

Section	Works zone (CH)	Treatment	Depth (mm)
1	0 + 000 – 1 + 750	• Mill 50 mm of the existing asphalt surfacing to spoil • Place 50 mm Stone Mastic Asphalt (SMA) as illustrated in Figure 0-1	50
2	1 + 750 – 2 + 160	• Mill 150 mm of the existing surfacing and base asphalt to spoil • Place 100 mm BTB (dense-graded; NMPS 20 mm; Mix Design Level II; binder PG 58E-22) • Place 50 mm Stone Mastic Asphalt (SMA) as illustrated Figure 0-2	150

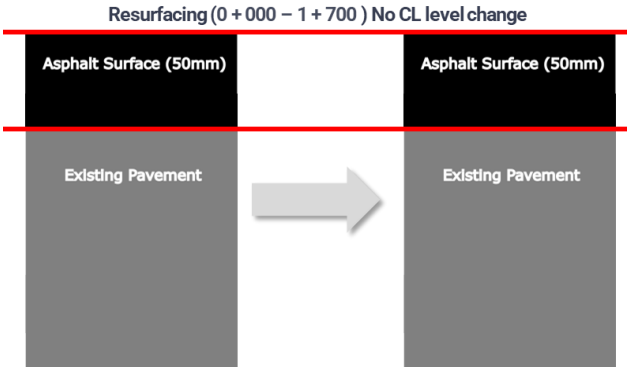


Figure 0-1: Mill and replace 50 mm Stone Mastic Asphalt (SMA).

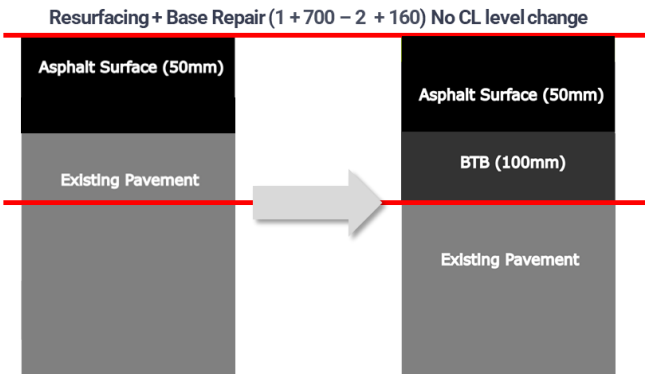


Figure 0-2: 1+750 – 2+160 Mill 150 mm existing asphalt; construct 100 mm BTB; construct 50mm Stone Mastic Asphalt (SMA).

Taxiways (Alpha, Bravo, Charlie and Echo)

The scope of work on Runway 08/26 is as follows and summarised in Table 0-1:

- Mill 50 mm of the existing asphalt surfacing to spoil
- Carry out localised base repairs by excavating the existing asphalt or granular base to a depth of 100mm and replacing with 100 mm BTB
- Place 50 mm Stone Skeletal Asphalt surfacing

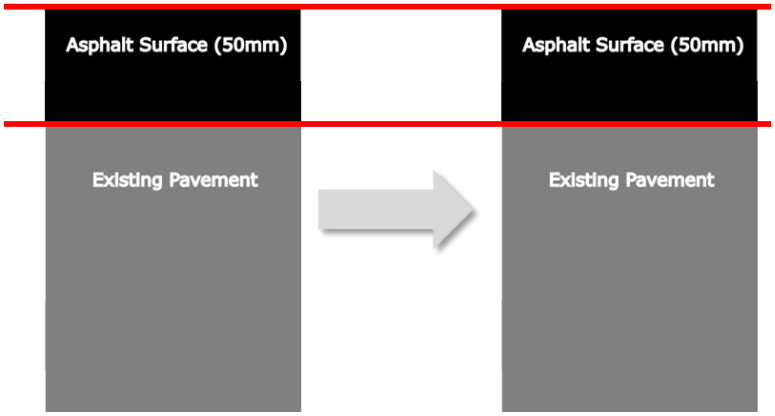


Figure 0-3 Mill and replace 50 mm asphalt (Stone Skeletal Mix as specified in Error! Reference source not found.**)**

General Aviation Area

The scope of work in GA includes localised surface and base repairs in the forms of patching, crack sealing and applying a rejuvenation spray, using an inverted bitumen emulsion rejuvenator.

EXTENT OF THE WORKS

The description of the work contained in the Extent of Work is merely an outline of the work to be executed in terms of the contract and shall not limit the work to be carried out by the Contractor. Estimated quantities of each type of work to be carried out are listed in the Bill of Quantities. The planned rehabilitation and construction measures are shown on the construction drawings.

The Works included in this contract will mainly consist of the works described in the sub-sections below:

(a) General

General work operations include:

i) Compilation and submission for approval of a detailed site safety plan and work method statements, all in compliance with the Manual for Working Airside – Volume 5.
ii) Attendance by all site staff of a safety training course and obtaining ACSA permits. This includes the necessary vehicle and equipment driving permits for any driver having to drive airside, as indicated in the Manual for Working Airside – Volume 5.
iii) Compile and submit a quality management plan for approval by the Employer's Agent.
iv) Compliance with local and national Occupational Health and Safety regulations (OHS Act No. 85 of 1993) and ACSA Health and Safety regulations.
v) Full compliance with the ACSA Environmental Specifications.
vi) Establishment on site of the camp, storage area for materials allocated for this project.
vii) Locating, relocating (where required) and protection of all services in the work areas.
viii) Undertaking of asphalt mix designs and trials to prove compliance with specifications.
ix) Structured and detailed interaction with various role players at the airport to ensure timeous completion of the works for each shift. These role players include the staff of the Airport Management (AM) and the Air Traffic Control (ATC). Management of the project planning and operational procedures for working airside.
x) Cleaning of the construction area after each work shift to the satisfaction of AM staff.
xi) Negotiate with and appoint selected subcontractors, independent laboratory and others as instructed.
xii) Radio license where applicable.

(b) Pavement rehabilitation

Work will have to be undertaken in phases taking the current traffic pattern into consideration and ensuring that the airport will still be operational during the construction period. Majority of the work will be executed as night shift work as the runway to be rehabilitated is the main runway

at the airport. It should be noted that the secondary runway cannot any flights whatsoever because it is temporarily closed. The time periods will be as follows:

- Runway 08/26 (main runway) From 22h00 to 03h00
- Taxiways From 22h00 to 03h00
- General aviation area From 22h00 to 03h00

03h00 to 04h00: The contractor needs to make allowance for cleaning the worksite. On Saturdays and Sundays, the last flight leaves at 20:30, which could allow the airport to issue a Notam to close the runway and for work to start earlier. The airport has a cargo plane operating at night which will be impacted by the works. Engagements will be required with the operator to ensure that agreements can be reached in terms of working times on a weekly basis. The Cargo plane only operates during weekdays. These times are not set in stone because delays or emergencies could occur.

The extent of the works can be summarised as follows:

Runway 08/26 (main runway)

The rehabilitation scope of work will include:

- Milling off 50mm of existing surfacing. (Ch0.0 to 2.160)
- Milling off 100mm of existing asphalt base (Ch1.750 – 2.160)
- Construction of 100 mm BTB (Ch1.750 – 2.160)
- Surfacing of 50mm of asphalt layer. (Ch0.0 to 2.160)

Taxiways (Alpha, Bravo, Charlie and Echo)

The rehabilitation scope of work will include:

- Mill 50 mm of the existing asphalt surfacing to spoil
- Place 50 mm Stone Skeletal Asphalt mix
- Localised base repairs with BTB to a depth of 100mm

General Aviation Area

The rehabilitation scope of work will include:

- Localised surfacing repairs to a depth of 50 mm
- Crack sealing (CR1 modified binder)
- Applying a rejuvenation spray, using an inverted bitumen emulsion rejuvenator

(c) Drainage improvements

- Introduction of 2.78km of new pipes and culverts (600mmØ to 1500 x 600mm) and 10 new grid inlets.
- Upgrading of 0.26km of pipes in the general aviation area.
- Reconstruction of outlet T1-SWMH3 to accommodate the new pipe size for T1-P1
- Upgrading of outlet T5-MH3 which will carry a significant amount of the flows along the airside area of the airport.
- Side drains at the edge of the runway graded strip and graded with minimum 0.25% slope towards the existing stormwater network.
- Armoflex lining (3850m x 2.5m wide at the top)
- Sub-surface drains (3980m)

(d) Other ancillary Works

There are a number of ancillary works which would be required as part of this contract which can be summarised as follows:

- Regular friction and texture depth tests will be conducted on the completed surface to ensure that specifications are met in terms of ICAO annexure 14.
    - Friction and macrotexture testing will be done to confirm compliance with ICAO Annex 14, Volume I for runway surface characteristics.
    - Friction will be measured with a self-wetting continuous friction measuring device, and results will be reported as rolling averages along the runway including the lowest values per runway portion.
    - The test speed will be 65 km/h and the nominal water film depth will match the device standard.
    - The measured friction values will meet or exceed the applicable device reference levels for new surface and will not fall below the stated maintenance planning friction level for any runway portion.
    - The mean texture depth of the new surface will be at least 1.0 mm and will be measured using the volumetric patch method to EN 13036-1 or an approved equivalent.
    - Testing will be done before works as a baseline, at Practical Completion for acceptance, and then at intervals set by the Aerodrome Operator during operations, and the Contractor will appoint and pay a SANAS-accredited

independent testing provider acceptable to the Engineer and submit results within 48 hours.

- Application of permanent and temporary runway and taxiway markings consisting of respectively reflective white and yellow markings using water-based paint complying with ICAO recommendations.
- Control dust and other pollution according to the safety plan and work method statements.
- All works to be strictly executed as per required legislation and under the operational rules as set by the Airport management and as such to allow continues use of the runway and airside area.

(e) Electrical Works

- Testing of back-up power sources and switching devices for compliance with ICAO Annex 14
- Servicing of UPS and IPS
- Evaluation of all CCRs' loads under the new installation
- Cable insulation testing and replacement as needed or indicated by maintenance data
- Replacement or laying of cables as indicated by designs
- Chromaticity and other photometric tests to evaluate AGL serviceability
- Replacement of damaged and non-serviceable AGL
- Evaluation of all light switchover time compliancy as regulated by Annex 14 and ensuring compliancy
- Documentation of the new installation including preparation of the necessary as-builts and SLDs

The AGL will have to be procured during the mobilisation period to allow cutting the long lead periods. The Service Provider will be paid upon delivery of equipment for MOS which is 80% and the rest upon installation.

(f) Changes to Scope of Work

It is a condition of this contract that the employer reserves the right to limit the total expenditure on the Works due to possible budget constraints. Should the tender sum exceed the budgeted amount, the scope of the works may be reduced at any time before or during the contract period to ensure that the final contract amount does not exceed the budgeted amount. Refer to Scope of Works sub-clause C1.1.3.9.

C3.1.3 LOCATION OF THE WORKS

The site of the Works is situated on the airside of Chief Dawid Stuurman International Airport in Gqeberha. The site is under the jurisdiction of the Airports Company South Africa (ACSA). Location of the site is shown on the Layout Plan (Drawing No. ROMH-188-07-R0-001). The contractor's site camp will be situated within ACSA's premises and shall be indicated at the site clarification meeting.

C3.1.4 TEMPORARY WORKS

The Contractor shall obtain written permission from the Employer's Agent before construction of any temporary works may commence. Temporary works will include the following:

(a) Where applicable (in limited occupation areas), transverse and longitudinal ramps at the end of each shift during construction of the asphalt overlays on the runways and taxiways. The details for the construction and removal of these ramps are discussed in the project specification.

(b) Signage and markings for the surface movement of aircraft and vehicles.

(c) Placing and removal of barricades where required.

(d) All facilities within the Contractor's construction camp. The design shall comply with the specifications, where provided in these documents and all statutory requirements such as the Occupational Health and Safety Act and Regulations. The area is to be reinstated upon completion.

(e) Access roads for the construction camp and temporary material stockpile site. These roads are to be designed, constructed and maintained by the Contractor to comply with safety and environmental requirements. They must be reinstated upon completion of the Works.

(f) Electrical connections to maintain circuits for the safe operation of elements.

(g) Temporary backfilling of excavations (at the end of each work shift) within the safety zone next to the runway and taxiways. The backfilling must comply with ICAO requirements.

(h) Temporary backfilling of excavations (at the end of each work shift) within the safety zone next to the taxiways. The backfilling must comply with ICAO requirements.

C3.2: ENGINEERING

C3.2.1 DESIGN SERVICES AND ACTIVITY MATRIX

The responsibilities for design and related documentation are as follows:

DESCRIPTION	RESPONSIBILITY
• Detailed design for construction	Employer's Agent's Representative
Temporary works (Section C3.1.5): Items a) to b) Items c) to h) and any other temporary works required by the contractor	 Employer's Agent's representative Contractor
As-built drawings: Provision of data and marked up drawings Preparation of drawings	 Contractor Employer's Agent's representative

C3.2.2 EMPLOYER'S DESIGN

The extent of the Employer's design is shown on the construction drawings.

C3.2.3 CONTRACTOR'S DESIGN BRIEF

The design brief for Temporary Works is provided in Section C3.1.5.

C3.2.4 DRAWINGS

Drawings are not required for the Temporary Works and will be designed by the Contractor.

The reduced drawings that form part of the tender documents shall be used for tender purposes only. The Contractor will be issued with an A3 paper copy and PDF file of each of the drawings required for construction. The Contractor shall, at his own expense, produce all further prints required for the construction of the Works.

The Contractor shall not use the drawings for any purpose other than the execution of the works.

Only figure dimensions on the drawings shall be used, and drawings shall not be scaled. The Employer's Agent shall supply any figured dimensions which have been omitted from the drawings.

The Employer's Agent may issue additional drawings as necessary to the Contractor from time to time during the progress of the works. The Contractor shall timeously notify the Employer's Agent of the priority in which drawings and details are required.

Before a Certificate of Completion will be issued, all as-built data must be provided to the Employer's Agent on completion of the Permanent Works. The data must be provided in electronic form (as per the Employer's Agent's format) or, where appropriate marked up on a set of drawings. Any information in the possession of the Contractor necessary for the Resident Engineer to complete his as-built drawings shall be supplied to the Resident Engineer on a regular basis and all information must be delivered before a Certificate of Completion will be issued.

The drawings, as listed in Volume 4, form part of the tender documents and shall be used for tender purposes only.

C3.2.5 DESIGN PROCEDURES

Asphalt mixes to be designed in co-ordination with an approved (by the Employer's Agent) specialist professional asphalt design engineer and laboratory and submitted to the Employer's Agent for approval. The design laboratory and specialist asphalt design engineer shall be paid under a Provisional Sum item provided in the Bill of Quantities.

Fundamental design principles and methods (see applicable SABITA, and other applicable institutions, manuals and guidelines) to be utilized to ensure optimal mixes in accordance with the specified performance criteria.

C3.2.6 CONSTRUCTION IN CONFINED AREAS

Working space for some of the work to be carried out under this contract is restricted. The construction method used in these confined areas largely depends on the Contractor's plant. However, the Contractor must note that measurement and payment will be according to the specified cross-sections and dimensions irrespective of the method used, and that the rates and prices tendered will be deemed to include full compensation for difficulties encountered while working in confined areas.

C3.3: PROCUREMENT

C3.3.1 PREFERENTIAL PROCUREMENT PROCEDURES

The Works shall be executed in accordance with the requirements specified in Section T1.2, Tender Data (Clause F3.11) and submitted by the Contractor in his Returnable Schedules.

C3.3.2 SUBCONTRACTING

(a) **Scope of Mandatory Subcontract Works**

The Mandatory Works to be subcontracted are the Electrical Works described in Clause C3.1.3(e). This Electrical Works (i.e., AGL) is specialised in nature.

(b) **Preferred Subcontractors**

The subcontractors must meet the requirements as laid out in Clause F3.11 of this document.

(c) **Subcontracting Procedures**

The electrical works shall be subcontracted to CIDB registered contractors in accordance with the subcontracting procedures set out in the General Conditions of Contract.

(d) **Attendance on Subcontractors**

The Contractor shall provide any necessary facilities in order to manage the specialist electrical subcontractor to ensure that the works are carried out in accordance with:

- The programme of works, and
- The contract requirements, and
- In the Project requirements concerning access to and from the airport facilities at the beginning and end of working shifts. He shall also ensure that the subcontractor complies with the requirements of the Safety Plan, Environmental Management Plan and Operational procedure requirements.

The Contractor shall provide any necessary facilities in order to manage any of their subcontractors to ensure that the works allocated to them are carried out in accordance with:

- The programme of works
- The contract requirements and

In particular the requirements concerning access to and from the airport facilities at the beginning and end of working shifts. The Contractor shall also ensure that the Sub-Contractor complies with all the requirements as contained in the Contract Documentation and in particular the Safety Plan, Environmental Management Plan and Operational procedure requirements.

C3.4: CONSTRUCTION

C3.4.1 WORKS SPECIFICATIONS

(a) **Applicable Standard Specifications**

The Standard General and Technical Specifications for Civil Works shall be the COTO - Standard Specifications for Road and Bridge Works for South African Road Authorities 2020.

The Standard Specifications forming part of this contract have been written to cover all phases of work usually encountered on road and bridge contracts and may therefore cover items of work not encountered in this Project contract.

The Contractor is responsible for ensuring that he is thoroughly familiar with all the amendments and corrections before submitting his tender.

(b) **Applicable National and International Standards**

The Works must comply with certain National and International Standards. These include:

- ICAO – International Standards and Practices: Aerodromes – Annex 14 to the Convention on International Civil Aviation (fourth edition – July 2004 and subsequent amendments) and related standards.
- SANS (SABS) Standards.
- ACSA – Operational Airfield Regulations (July 1998 as amended)
- The Occupational Health and Safety Act of 1993
- The Construction Regulations of 2024/As amended
- The employer may from time-to-time issue specifications & standards for defined work as necessary.

Where required, compliance with these and other National and International Standards have been specified in the Standard and Project Specifications.

(c) **Project Specifications**

In certain clauses, the Standard Specifications allow a choice to be specified in the Particular (Project) Specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a Contract. Details of such alternatives or additional requirements applicable to this Contract are contained in the Particular (Project) Specifications (C3.6). It also contains some additional specifications required for this Contract.

(d) **Certification by Recognized Bodies**

Where required, South African Bureau of Standards (SABS) must undertake the certification of items for inclusion in the Works.

C3.4.2 PLANT AND MATERIALS

(a) Plant and Materials supplied by the Employer

Nil

(b) Materials, Samples and Shop Drawings

- Where required, requirements for proof of compliance with materials specifications, submission of samples of materials and finishes and requirements for shop drawings, are stated in the standard or project specifications. This will also apply to the subcontracts.
- All materials used in the works shall, where such mark has been awarded for a specific type of material, bear the official mark of the SANS (SABS). Written proof shall be obtained from the Employer's Agent for any materials not bearing the official mark of the SANS.

C3.4.3 CONSTRUCTION EQUIPMENT

(a) Requirements for Equipment

- Where applicable, minimum requirements for equipment are specified in the Standard (Clause A9.1.6 of COTO, Chapter 9) and Project specifications.
- The Contractor shall indicate in his Milling and Paving Method Statement how he will manage an emergency where a plant item breaks down during a milling and paving operation, or any other operation being undertaken within the 50-meter restriction zone of the main runway (from edge of both the main and secondary runways) to ensure timeous opening of the runway (during short term closures). The equipment shall as a minimum include:
  i. A low bed with winch that has sufficient capacity to remove a 30-ton roller.
  ii. Equipment (porta-pack) capable of releasing the hydraulics on a milling machine and undertaking the removal thereof from the runway.

  The Contractor shall, before the start of the milling and paving operations, successfully demonstrate to the Employer's Agent how he will remove any substantial item of plant (i.e. milling machine, roller or paver) from the runway or graded strip when it is in a broken-down state. This operation must be completed within 1 hour from the request for removal.
- The equipment required for this operation shall always be available on the airside of Chief Dawid Stuurman International Airport for use in an emergency situation during a working shift where

work is being carried out under short term closures on the runway or within a distance of 50m from the runway edge. Work on the runway and in the clearance zone will not be allowed if these requirements are not complied with.

(b) Equipment Provided by the Employer

- Nil

C3.4.4 EXISTING SERVICES

- Specifications related to existing services are provided in the Project Specifications (Section C3.6; Clause A2.1.3)

C3.4.5 SITE ESTABLISHMENT

a) Services and Facilities Provided by the Employer

- The location of and access to a proposed construction camp will be provided to the Contractor. Approval for the establishment of a construction camp must be obtained from ACSA. The Contractor is responsible for all arrangements for obtaining all necessary approvals, establishment and subsequent removal and reinstatement of his construction camp. Note that services for water and sewer will not be free of charge, and the utilization of these services will be at the expense of the Contractor.
- Other contractors may in part also use the proposed area. The Contractor must at all times limit his personnel, plant, equipment and materials at the Contractor's site or the working areas as approved by the Employer's Agent. No personnel shall be accommodated on airport property. Only guards approved by the Employer and on duty may be on site at all times. The Contractor shall only use the designated gate(s) for access purposes to the airside.
- The area designated by the Employer's Agent can be used for stockpiling material for use in the works and for temporary parking of plant and equipment. This location is to be confirmed by the Employer.
- All regulations and local authority ordinances, as regards smoke emissions and noise abatements shall apply and compliance will be enforced as well as height restrictions and any required obstacle markers.
- Also refer to the requirements of Clause 3 of the **Procedure Manual for Working Airside (Volume 5)**

b) Facilities Provided by the Contractor

- The requirements for facilities to be provided by the Contractor for use by the Employer and his agents such as office, ablution and laboratory facilities are stated in Part C3.6, Section A1.4.7.1.
- The Contractor shall make his own arrangements for the supply of electrical power, water (see Clause A1.3.3), telecommunication services, ablution facilities, sewer services, first aid facilities and other services, the payment thereof and all reinstatements required upon completion. No direct payment will be made to the Contractor for the provision of electrical and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required.
- The Contractor will be required to erect a security fence around the construction camp and temporary parking area for plant and equipment. The cost thereof is regarded to be included in the relevant rates for establishment on site.
- The storage of fuels in tanks may be kept in the Contractor's camp subject to the regulations of the Airport authorities that require a berm or wall around the installation sufficient to retain the capacity fuel of the tanks.
- The Contractor shall make his own arrangements for telephone and facsimile facilities. Cellular phones will be acceptable, but the Contractor must obtain airside permits from ACSA at his own cost.

c) Storage and Laboratory Facilities

The Contractor shall make a storage room available for use by the Engineer’s staff. A commercial laboratory shall undertake material testing for the Engineer.

d) Other Facilities and Services

The Contractor shall be responsible for the removal of all waste generated from the airport property and the proper disposal thereof elsewhere at his own cost.

If required by the Engineer, the Contractor shall supply portable chemical toilet facilities next to the construction site for his staff as well as for the Engineer's supervisory staff. These facilities must daily

be erected and removed on a daily basis and regularly serviced to the satisfaction of the Airport Authorities and the Engineer.

e) Vehicle and Equipment

Requirements (i.e., Permits) for vehicles, equipment, and drivers operating on the Airside at Chief Dawid Stuurman International Airport follow the rules set out in the ACSA Airside Safety Manual (Procedure Manual for Working Airside (Volume 5)). The manual will be issued to the appointed contractor. All vehicles and drivers must hold the permits and authorisations specified in that manual before accessing or operating within the Airside area.

f) Advertising Rights

Only one sign board for the Contractor and his subcontractors may be erected at the entrance to the construction camp. Also refer to Chapter 1, Part C1.3(COTO)and Item C1.3.2 of the Project Specification (C3.6).

g) Notice Boards

A construction notice board complying to client recommended specifications must be provided and erected at a position to be agreed with the Employer. The cost of the supply and erection of this notice board must be included in the establishment cost of the Contractor. Also refer to Chapter 1, Part C1.3 and Item C1.3.2 of the Project Specification (C3.6).

C3.4.6 SITE USAGE

Restrictions on the site usage are stated in the Procedure Manual for Working Airside (Volume 5).

C3.4.7 ALTERATIONS, ADDITIONS, EXTENSIONS AND MODIFICATIONS TO EXISTING WORKS

The Contractor must satisfy himself that the dimensional accuracy, alignment, levels and setting out of existing components are compatible with the proposed Works. Where this is not the case the Employer's Agent's Representative must be notified in writing at the earliest possible time.

C3.4.8 WATER FOR CONSTRUCTION PURPOSES

The Contractor must make all arrangements for the transport, storage and distribution of water required for construction purposes and for his own use and at his own cost (allowed for in the relevant tendered

rates). Alternatively, water can be purchased from ACSA at a prescribed rate. Refer to Item A1.2.3.21 for further details.

C3.4.9 SURVEY CONTROL AND SETTING OUT OF THE WORKS

The Contractor shall place beacons in concrete, marked and certified by a professional land surveyor. Beacons shall be check-levelled during construction to confirm the accuracy when instructed by the Employer's Agent. Refer to A1.2.7.2 for further details.

Construction mobilisation and stockpiling

Stockpiling will need to occur on a site on the landside, and the Contractor will have to provide their own 24-hour security personnel. The site camp will be located somewhere on airside with a few sites determined and will be shared in the clarification meeting. Equipment can be stored either on landside or airside. Ideally, limited equipment should be on airside at a time. Delivery and access to airside will be through the main gate and should be limited to nighttime to prevent delays of the works of the gate during normal airport operating hours.

C3.5: MANAGEMENT

C3.5.1 MANAGEMENT OF THE WORKS

(a) Planning and Programming

The Contractor's programme must be based on the interim milestone dates for completion specified in Table C3.5.1 below and the Working Times defined in the **Procedure Manual for Working Airside (Volume 5)**. Penalties will be imposed if these Interim Milestone dates are not achieved. Refer to Section C1.2 (contract Data), Sub-clause 5.13.1.

Table C3.5.1: Interim Milestone Dates

Milestone Event	General Description of Work	Milestone Completion
		Indicative Only
Main Runway 08-26	Completion of all rehabilitation, surfacing, paint marking and replacing electrical elements	197 nights
Taxiway Alpha	Completion of all rehabilitation, surfacing, paint marking and replacing electrical elements	35 nights
Taxiway Bravo	Completion of all rehabilitation, surfacing, paint marking and replacing electrical elements	35 nights
Taxiway Charlie	Completion of all rehabilitation, surfacing, paint marking and replacing electrical elements	35 nights
Taxiway Echo	Completion of all rehabilitation, surfacing, paint marking and replacing electrical elements	35 nights
General Aviation area	Completion of all rehabilitation, surfacing, paint marking and replacing electrical elements	14 nights
Drainage and ancillary work	Completion of all new drainage and maintenance of existing where necessary	197 nights (parallel works)
Note: All indicative dates are to be used as a guide for sequencing of works. Final construction programme to be submitted by appointed contractor for approval by ACSA and engineer.		

An example of construction programme based on these phases is presented on the next page to assist the Contractor in the preparation of his Initial Programme. This programme is provided for illustrative purposes only and the Contractor must draw up his own programme that complies with all requirements of this project and which suits his own resources. Detailed specifications for the compilation and management of the construction programme are stated in Section C3.6 (Clause A1.2.7.1) and in Clause 4 of the Airside Manual (Volume 5).

(b) Sequence of the Works

The sequence of the Works will be determined by the logical order of activities as illustrated in the potential construction programme on the next page and the specified Interim Milestone dates in Table C3.5.1. It is important to note that:

(a) The contractor shall also allow time in its programme for trial sections of the asphalt mixes.

(b) Allowance has been made in the contract for testing the skid resistance of the runway during the application of surfacing, allowance forms part of pay item C20.1.

(c) Some non-critical activities can be done in a different phase to those highlighted in Table C3.5.1 as long as that approval has been obtained from AM and subject to the availability of escort from ACSA.

(d) A minimum of seven (7) days advance notice from the contractor is required to switch between work areas.

(c) Methods and Procedures

The methods and procedures that must be complied with are contained in Volumes 2, 3, 4 and 5 of the contract documentation. These include but are not limited to:

- Methods and Procedures in the Standards Specifications (Volume 2, COTO).
- Civil Works Methods and Procedures in the Project Specifications (C3.6).
- Occupational Health and Safety Specifications (C3.7.1).
- Environmental Work Instructions (C3.7.2).
- Manual of Procedures for Working Airside (Volume 5).

(d) Quality Plans and Control

The requirements for Quality Plans and Control are stated in Section A1.2.8 of the Project Specification (C3.6).

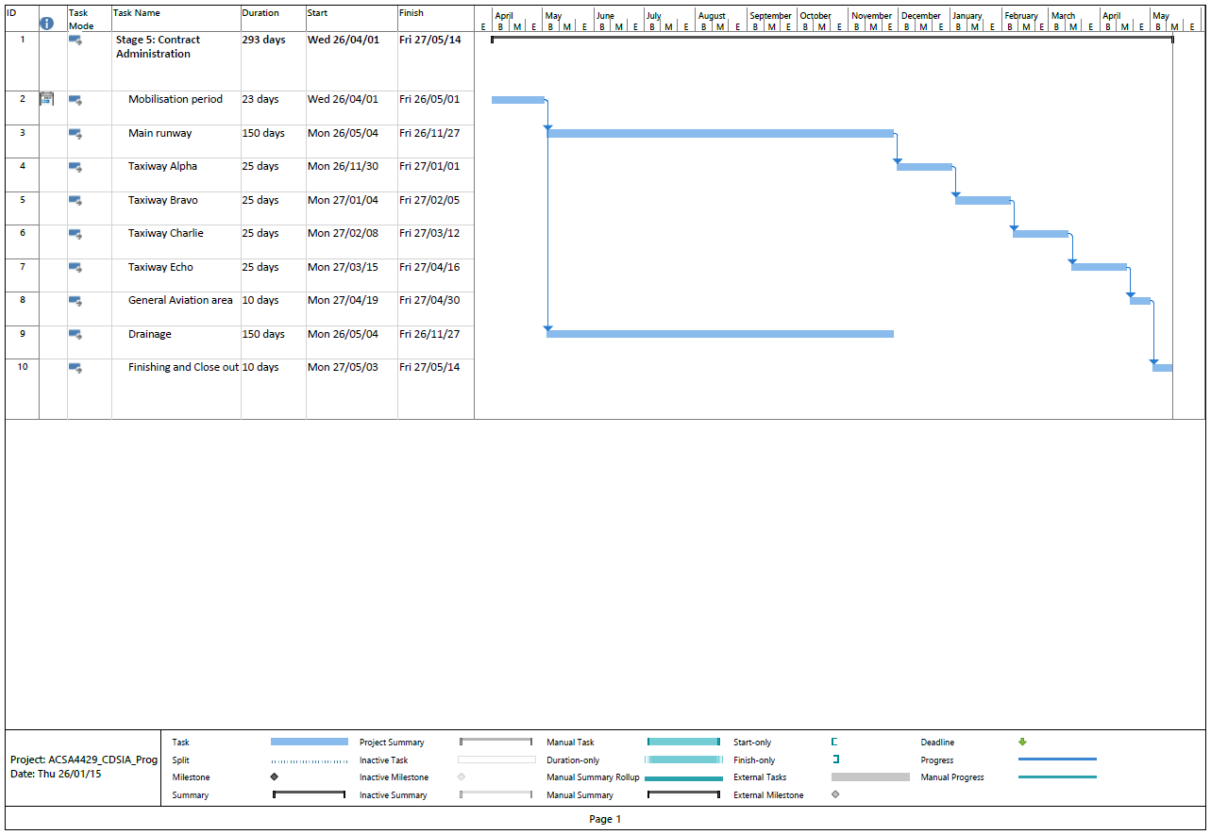
(e) Allowable Periods

Time is of the essence, and all construction work must be completed on the schedules/stipulated times. A fixed **27-month contract duration** for the Final Completion of the contract has been provisioned. The Principal Contractor is required to use the first three (3) months of the contract for pre-works administration which include the ACSA permit application and training processes. From site handover, a maximum 12 calendar months duration has been allowed to achieve Works/Practical Completion (construction period). The defects liability period will be a maximum of 12 months. Sufficient manpower shall be made available to cope with the construction schedule dates.

Any cost item which the prospective tenderer regards necessary for the proper functioning or completion of an item or element, shall be added to the tender rates as there must be no uncertainty that the tender rates and total tender price is all inclusive.

Prospective tenderers shall make sufficient allowance for site management and administrative staff. The project scope is not final and fixed and it is anticipated that comprehensive site communication (via site instructions/queries, etc) will transpire during the execution of this contract. Site co-ordination meetings will be held and the Contractor's site manager shall attend these meetings and promptly implement the requirements put forward. Prospective tenderers shall allow in their tender rates for all aspects which could lead to non-continuity of work, disruption or any other event which is regarded normal to fast-track this type of construction projects.

Figure C3.5.1: Indicative Construction Programme



ID	Task Mode	Task Name	Duration	Start	Finish
1		Stage 5: Contract Administration	293 days	Wed 26/04/01	Fri 27/05/14
2		Mobilisation period	23 days	Wed 26/04/01	Fri 26/05/01
3		Main runway	150 days	Mon 26/05/04	Fri 26/11/27
4		Taxiway Alpha	25 days	Mon 26/11/30	Fri 27/01/01
5		Taxiway Bravo	25 days	Mon 27/01/04	Fri 27/02/05
6		Taxiway Charlie	25 days	Mon 27/02/08	Fri 27/03/12
7		Taxiway Echo	25 days	Mon 27/03/15	Fri 27/04/16
8		General Aviation area	10 days	Mon 27/04/19	Fri 27/04/30
9		Drainage	150 days	Mon 26/05/04	Fri 26/11/27
10		Finishing and Close out	10 days	Mon 27/05/03	Fri 27/05/14

(f) Construction Method Statement

Within 14 days of the Commencement Date the Contractor shall submit a Construction Method Statement to the Employer's Agent for approval by the Employer. Once approved, this Statement will form part of Appendix C of the Procedure Manual for Working Airside (Volume 5). No work on the airside will be allowed until the Employer has approved this Construction Method Statement.

The Method Statement shall include:

- All measures to be implemented to comply with the requirements of the Procedure Manual for Working Airside (Volume 5).
- All measures to be implemented to comply with the requirements of the OHS Act.
- A contingency plan to deal with interruptions of shifts by inclement weather, plant breakdowns or emergency closures of the work areas.
- Special measures, such as availability of back-up plant, to be implemented in normal shifts to comply with the Project Specifications.
- Measures and equipment that will be used on site to limit the ingress of water into the excavations and to remove rainwater from the excavations.
- Measures to protect services (above and below surface) during construction.
- Procedures to ensure that the whole work area is safe before removing staff or handing over of the site at the end of each work shift.
- A watchman to remain on site of excavations/construction with telephone contact to the contract manager in case of emergency.
- The cost of complying with the ACSA approved method statement is deemed to be covered by the tendered rates for the Contractor's General Obligations.

(g) Environment

The Environmental requirements are specified in ACSA Specifications (Section C3.7.2)

(h) Accommodation of Traffic on Roads and Accesses used by the Contractor

ACSA staff and other stakeholders will also use the access road to the construction site and camp. It is therefore a requirement that the Contractor coordinate with all stakeholders on a daily basis (to be recorded at the daily meeting) on the usage of the roads by the Contractor's vehicles and construction equipment.

(i) Testing, Completion, Commissioning and Correction of Defects

Procedures for testing, completion, commissioning and correction of defects will be provided to the Contractor by the Employer's Agent on site.

(j) Recording of Weather

The Contractor shall provide an electronic mobile weather station. He shall erect them according to the requirements of the weather bureau. The Contractor shall record and keep a record of the daily rainfall and maximum/minimum temperatures and supply the data to the Employer's Agent on a daily basis.

The Contractor shall also record wind speed measurements on site as agreed with the Employer's Agent's Representative. Data can also be obtained from the local weather bureau but has to be recorded on site on a daily basis.

The cost of complying with these requirements is deemed to be covered by the tendered rates for the Contractor's General Obligations.

(k) Format of Communications

All instructions or requests need to be confirmed in writing through:

- Site instructions.
- Requests for inspections.

(l) Key Personnel

The Contractor, Employer's Agent and Employer must compile a schedule of their Key Personnel with their contact numbers and keep it updated as per requirements for the contact list in Volume 5 – Procedure Manual for Working Airside. The list must be made available to the Employer's Agent, Employer and Contractor.

(m) Management Meetings

The following formal meetings will be held at the office of the Employer's Agent's Representative between the representatives of the Employer, Employer's Agent and the Contractor:

- Daily kick-off meeting (One hour before the start of a shift).
- Weekly progress meeting (Two hours before the start of a shift).
- Monthly site meeting (Date and time to be agreed by attendees).
- Monthly technical meeting (Date and time to be agreed by attendees).

The representatives must have the necessary delegated authority in respect of aspects such as planning, change management and health and safety.

(n) Daily records

The Contractor must keep daily records of resources (people and equipment employed) and site diaries in respect of work performed on the site. A copy of the previous day's daily record must be provided to the Employer's Agent on a daily basis.

(o) Bonds and Guarantees

Original copies of the bonds and guarantees must be lodged at the office of ACSA, Chief Dawid Stuurman International Airport and one copy of each must be kept on site with the Employer's Agent's representative. On release, the bond and guarantees can be collected from ACSA.

(p) Payment Certificates

The Employer's Agent's certificate will be issued only after receipt by him of a draft certificate prepared by the Contractor at his own expense in the form prescribed by the Employer's Agent. The cost of duplicating and delivering copies of the certificate to the Contractor, the Employer's Agent and the employer shall be borne by the Contractor. The Employer's Agent and the employer shall require three (3) sets of A4-sized paper copies in total.

(q) Permits

All requirements in connection with the application for and usage of permits are stated in the Airside Manual (Volume 5) and Chapter 1, C1.2 General Requirements and Provisions, A1.2.3.7 (Project Specification C3.6).

Before commencement of any airside works, the Contractor must obtain the following approvals:

1. Construction Work Permit from the Department of Labour (DoL).
2. Safety Case approval from the South African Civil Aviation Authority (SACAA).
3. Safe Works on Airside approval from ACSA Airside Compliance.
4. AIRAC submission and publication approval by SACAA for any operational changes requiring aeronautical information updates.

The Contractor shall allow sufficient lead time for these approvals and submit all supporting documents as required by the Employer and aviation authorities.

(r) Insurance Provided by the Employer

For information on the Employer Insurance, refer to Clause 35.1 Section C1.2.

C3.5.2 HEALTH AND SAFETY

(a) Health and Safety Requirements and Procedures

Health and Safety requirements and procedures are presented in Annexure B, Section C3.7.1.

(b) Barricades and lighting

Requirements for the provision and usage of barricades and lighting are stated in **Volume 5** and **Chapter 1 of the Standard Specifications**.

(c) Traffic Control

Safety requirements and procedures where the Contractor has occupation of taxiways, runways or roads are stated in **Volume 5** and **Chapter 1 of the Standard Specification.**

C3.5.3 OTHER

(a) **Time**

Time is of the essence and all construction work must be completed on the schedules/stipulated times. Sufficient manpower shall be made available to cope with the construction schedule dates.

Any cost item which the prospective tenderer regards necessary for the proper functioning or completion of an item or element, shall be added to the tender rates as there must be no uncertainty that the tender rates and total tender price is all inclusive.

Prospective tenderers shall make sufficient allowance for site management and administrative staff. The project scope is not final and fixed and it is anticipated that comprehensive site communication (via site instructions/queries, etc) will transpire during the execution of this contract.

Site co-ordination meetings will be held and the Contractor's site manager shall attend these meetings and promptly implement the requirements put forward.

Prospective tenderers shall allow in their tender rates for all aspects which could lead to non-continuity of work, disruption or any other event which is regarded normal to fast-track type of construction projects.

(b) **Flexibility of Construction Activities**

All construction activities are under the direct control of the project manager who will liaise with the Engineer and as such he has the right to instruct the Contractor to deviate/adjust/direct/modify the Contractor's schedule and/or activities within the limits of the time for completion specified for this contract to serve the best interests of the project. The Contractor shall be flexible and able to adapt to changing circumstances.

(c) **Execution of contract simultaneous with others**

Prospective tenderers are advised that other Contractors will install equipment all under other contracts during the construction period of this contract and reasonable access must be afforded to such Contractor(s) at all times. All tender rates shall be deemed to fully allow for this provision.

(d) **Arrangements with the supply authority**

The costs of all arrangements with the Supply Authority with regard to inspections, tests and requirements to comply with regulations, and the actual costs of inspections, tests, provision of labour, test equipment, etc shall be for the Contractor's own account.

For this installation the Airports Company South Africa shall make permanent power available to the Contractor from the existing power and lighting complex and no connection fees shall be required.

(e) **Installation work**

It shall remain the Contractor's responsibility to carry out the work in accordance with this document, to provide the logistics and infrastructure required for the works, to provide adequate full-time supervision at the works, to programme and manage the works, to ensure compliance with Codes, Standards and Regulations, to provide registered and qualified site staff at all times and in accordance with the Laws and Regulations.

The Engineer's representative will inspect the installation from time to time during the progress of work. Discrepancies will be pointed out to the Contractor and these shall be remedied at the Contractor's expense. Under no circumstances will these inspections relieve the Contractor of his obligations in terms of the document nor will these inspections be regarded as final approval of the works or portions thereof.

Where the Engineer has appointed a full-time representative at the works, this representative shall not be regarded as relief of the Contractor's obligations in terms of the documents.

The Engineer's inspection shall only be carried out after the Contractor has carried out his own preliminary inspection to ensure that the works are completed and comply with the documents.

The Engineer's inspection shall therefore not be regarded as supervision, fault listing, quality assurance or site management. Inspection and testing procedures are fully detailed in the specifications.

(f) **Co-ordination**

The drawings and schedules are of a schematic nature and unless specific dimensions to the equipment are shown, the Contractor shall co-ordinate the installation of equipment and fittings with the other

Contractors and trades on site before installation. Should agreement not be reached or if the equipment or fittings cannot be installed in the obvious locations to conform to the design, the Engineer's ruling shall be obtained beforehand.

(g) **Workshop designs and drawings**

The Contractor shall submit to the Engineer detailed or workshop drawings of all items to be manufacture, assembled or installed for approval prior to the commencement of the manufacture or construction of such works.

The tenderer shall submit with his tender comprehensive details of standards and criteria, which will be used in the detailed designs, preparation of workshop drawings, manufacture and testing of equipment.

(h) **Design responsibilities**

The design responsibility of the installation, general layout, arrangement and the functionality of the systems rest with the Contractor with regard to interpretation of the employers requirements. The detailed installation design responsibility, also, rest with the Contractor with regard to the

design for installation and manufacturing and the compliance to specifications and requirements, which are stipulated in the contract documents and on the drawings.

The cost of complying with these requirements is deemed to be covered by the tendered rates for the Contractor's General Obligations.

(i) **Quality of Materials**

All material shall be of high quality and suitable for the conditions on site. These conditions shall include weather conditions as well as conditions under which materials are installed, stored and used. Should the materials not be suitable for use under temporary site conditions the Contractor shall at his own cost provide suitable protection until these unfavourable site conditions cease to exist.

All materials proposed by the Contractor shall be tested. The test, as well as the materials, shall be approved by the Engineer prior to such materials being built into the works and all costs involved shall be deemed to be included in the quoted rates.

(j) **Safety and Security**

The Contractor shall appoint a responsible person and assistant and their names shall be forwarded to the Engineer before any work may commence on site. The responsible person shall legally be responsible that safety measures are exercised on site by his workforce. No work may be executed on site if neither of these two persons is on site.

The Contractor will be responsible for the safety of his personnel on site at all times. All laws, rules and regulations shall be strictly followed in this regard and all the necessary precautions and measures shall be taken to ensure the safety of personnel, the public and equipment.

Where work is to be carried out on or in the proximity of live electrical equipment the Contractor shall make all the necessary arrangements with the relevant Supply Authority to isolate and earth such equipment. These arrangements shall be in writing and copies thereof shall be submitted to the Engineer. The Contractor shall also adhere to any requirements or procedures the Local Supply Authority may have in this regard. None of these arrangements shall, however, alleviate the Contractor's responsibilities in terms of this contract or any Laws and Regulations.

(k) **Protection of Other Services and Structures**

The Contractor shall take all the necessary precautions to protect existing services, finishes and structures during the execution of the contract. All repairs and damages shall be the responsibility of the Contractor and the cost thereof shall be borne by the Contractor.

The Contractor shall exercise extreme care when excavations are made to avoid damage to existing or newly installed services. Any damages to other services will be rectified forthwith and the costs for the rectification will be recovered from the Contractor.

(l) **Finishing and Tidying**

In view of the intense concentration of construction activities likely to be experienced during the construction period, progressive and systematic finishing and tidying will form an essential part of this contract. At no time may spoil rubble, materials, equipment of unfinished operations be allowed to accumulate in such a manner as to unnecessarily impede the activities of others and in the event of this occurring, the employer shall have the right to withhold payment for as long as may be necessary in respect of the relevant works in the area (3) concerned without prejudicing the rights of others to institute claims against the Contractor on the ground of unnecessary obstruction.

Finishing and tidying must not simply be left to the end of the contract. All finishing and tidying shall be carried out to the best advantage of the project as a whole and in the close co-operation with other Contractors.

(m) **Variations to Contract Price**

All costs for variations to the contract shall be done in accordance with the rates that shall be completed by the Electrical Contractor in the pricing section of this document.

Any items or variations for which rates have not been included in the Schedules shall be priced as non-scheduled items.

All instructions, directions or explanations to the electrical Contractor shall be given in writing by the principal Contractor. The Contractor shall not accept oral instructions from any party whatsoever.

(n) **Maintenance and Guarantee**

The equipment and installation included in the contract shall be guaranteed and maintained for a period of twelve months from the date of acceptance by the Engineer in all respects for continuous service. The tender price shall include the above.

For the full duration of the maintenance period, the Contractor shall be responsible for the complete installation with respect to the necessary replacement and adjustments to the equipment to ensure the proper working thereof.

(o) **Blasting**

No blasting is allowed at the airport.

(p) **Protection of Area**

The Contractor shall confide his operations to as small an area as may be practical for the purpose of constructing the works.

Only those trees directly affected by the works and such others as the Engineer may direct in writing shall be cut down and stumped.

On completion of operations the ground surface where it may have been disrupted by the Contractor shall be restored to its original condition by filling in all ruts with material similar to the material within the rut and levelling the ground and where necessary planting grass and shrubs as may be required. Any boundary fences, which have been removed or damaged, shall be repaired and/or reinstated at the Contractor's expense.

The natural vegetation must not be disturbed other than in areas where it is essential for the execution for the work or where directed by the Engineer.

(q) **Disposal of Waste Material**

All waste material as result of the works including the demolished trees, brush, rubbish, fences and all other objectionable material will be removed and disposed of at a legal site found by the Contractor and approved by the Engineer.

C3.6: PARTICULAR (PROJECT) SPECIFICATIONS

General note: ***The Standard Specifications as well as the Particular (Project) Specifications refer to the 'Engineer' whereas the General Conditions of Contract for Construction Works, 2015, Third Edition, (GCC 2015) refer to the 'Employer's Agent'. In all cases where reference is made to the Engineer in the Standard Specifications or the Project Specifications, it shall have the same meaning as the Employer's Agent as defined in the General Conditions of Contract.***

SECTION A: SPECIFICATION AMENDMENTS

SECTION A1: STANDARD AMENDMENTS ISSUED BY COTO

Notes to Tenderer:

1. The Standard Specifications for Road and Bridge Works for South African Road Authorities (Draft Standard October 2020 edition) prepared by the Committee of Transport Officials, (COTO), as amended, shall apply to this contract. The amendments are those issued by COTO and reproduced in Section A1, together with additional amendments as set out in Section A2 and Project specific Specification Data as set out in Section B.

2. As to February 2025, no amendments have been issued by COTO, but if amendments are issued, they are to be implemented.

SECTION A2: PROJECT SPECIFICATION AMENDMENTS TO THE COTO STANDARD SPECIFICATIONS

Notes to tenderer:

1. This Section A2 contains amendments to the Standard Specification, including additional clauses, amendment to clauses or deletion of clauses and specifications, required for this particular contract. Where the Standard Specifications allow a choice to be specified in the Contract Documentation or Project Specifications, between alternative materials or methods of construction, and for additional requirements to be specified to suit a particular contract, these selections are not made in this Section A2. Details of such alternatives or additional requirements applicable to this contract are contained in.

2. The number of each clause and each payment item in this part of the project specifications follows the numbering format of the standard specifications.

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COTO CHAPTER 1: GENERAL

SECTION 1.1: GENERAL PREAMBLE

PART A: SPECIFICATIONS

A1.1.2 DEFINITIONS

Add the following definitions and terms to Section A1.1.2 of the Standard Specifications:
(Also refer to the definitions provided in the Airside Manual – Volume 5):

CARRIAGEWAY AND FREEWAY – Shall also mean the asphalt surface areas of the runways, taxiways and the concrete aprons."

ROAD PRISM – "The road prism shall also mean the prism of the runways, taxiways and aprons."

AIRPORT ROADS – Airport roads are defined by a network of public and non-public roads within the airport boundary providing access to the various airport buildings or areas.

AIR TRAFFIC – Means all aircraft in flight or operating on the manoeuvring areas of an aerodrome.

CONTROL TOWER – Means an air traffic control unit established to provide an air traffic control service.

INSTRUMENT LANDING SYSTEM CATEGORY I (ILS CAT I) – Means an approach and landing aid designed to identify an approach path for exact alignment and descent of an aircraft making a landing with a runway visual range of 800 m and a decision height of 60 m.

INSTRUMENT LANDING SYSTEM CATEGORY II (ILS CAT II) – Means an approach and landing aid designed to identify an approach path for exact alignment and descent of an aircraft making a landing with a runway visual range of 400 m and a decision height of 30 m.

INTERNATIONAL CIVIL AVIATION ORGANISATION (ICAO) – Means a specialised agency of the United Nations with a membership of 183 Contracting States as of August 1994.

LANDING AREA – Means that part of a movement area intended for the landing or taking off of aircraft.

THRESHOLD – The threshold is the beginning of that portion of the runway used for the take-off and landing of aircraft. The clearway is the area beyond thresholds.

PARTY, PARTIES AND THIRD PARTY – 'Party' and 'Parties' means the Client and the Consultant, and 'Third Party' means any other person or entity as the contract requires."

PART C: MEASUREMENT AND PAYMENT

C1.1.3 PAYMENT

Add the following paragraph to the Clause C1.1.3.2:

"VAT shall be excluded from the rates and added as a lump sum to the total value of work measured for payment."

Add the following subclause

C1.1.3.5 Payment for materials on the Site

In the last sentence of the 1st paragraph, delete the following:

", or, in the case of crushed stone which has not been purchased but has been produced on the site, at 80% of a fair evaluation of such crushed material."

Add the following new subclauses:

C1.1.3.9 Reduced payments for substandard work

Where provision for reduced payments for substandard work is made in the Contract Documentation, acceptance of reduce payment for substandard work may be accepted by the Engineer subject to prior approval by the Employer.

C1.1.3.10 Rates to remain unchanged when scope of work changes

Dependent on the rates and prices offered in the Pricing Schedule, the Employer intends to increase or reduce the scope of work to match the budget allowed for this project. To this end the Contractor has been provided the opportunity to price separately for unit rates of work and the establishment of major plant. The value of such increase or reduction in the scope of works shall not give cause for the Contractor to vary the offered rates and prices, which shall remain final and binding for the duration of the contract, provided that:

(i) Notification of the change to the scope of work is given in writing within 28 days of the tender closing date.

(ii) The value of the increase or reduction in the scope of work does not alter the tendered sum by more than 20%.

C1.1.3.11 Procurement of sub-services and omitted rates (Second tier procurement)

Second tier procurement include the procurement of any work where either the particular of the work is not scheduled and priced, or where the process of procurement of the sub-service provider is specified elsewhere in the contract specification. It includes the procurement of work where rates have been omitted or where allowance for the work is made under a Provisional sum or Prime sum item or where allowance for the work is made under a Provisional sum or Prime sum item but the particular of the work is not scheduled.

Refer to C3.3 regarding Procurement.

"The Employer will determine the most appropriate procurement process to be followed and approved accordingly"

A1.1.2 GENERAL CONDITIONS OF CONTRACT

Add the following:

The General Conditions applicable to this Contract are the General Conditions of Contract for Construction Works, 2015, Third Edition, (GCC 2015).

Accordingly, all reference in the Standard Specifications to any other General Conditions of Contract (GCC) has to be amended. The Standard Specifications have been scrutinised and clauses which refer to another GCC, identified. These are tabulated below together with the relevant equivalent clause in the GCC 1998 Conditions of Contract. The context of the reference to the GCC is also noted.

Whereas every effort has been made to include all of the affected clauses in the table, there may be some omissions. In every case, however, the GCC 2015 Conditions of Contract for Construction, as amended by the Special Conditions of Contract in Section C1.2 of this Volume, shall apply and the contractor shall be responsible for interpretation of the equivalent clause

SECTION 1.2: GENERAL REQUIREMEMENTS AND PROVISIONS

PART A: SPECIFICATIONS

A1.2.3 GENERAL

A1.2.3.4 Extension of time for delays caused by rainfall and delays caused by actions of airport authorities.

Delete the entire clause and replace with the following:

Change the existing heading of clause A1.2.3.4 to read as above and make the following changes to b) *Method 2 (Critical-path method with consequential delays)* which will apply to this Contract:

Add the following as a new paragraph:

"Extension of time resulting from abnormal rainfall, very cold weather or other forms of inclement weather shall be calculated according to the requirements of Method 2 (Critical-path method). The value of "n" working days per calendar month as specified in this clause shall be as given in Table A1.2.3.4/1 below. If no abnormal rainfall or other inclement weather periods occur during a specific calendar month (or months), the n-values as specified shall not be taken as accumulating over the contract period. If the "n"-days allowed for in the programme of work are not taken up by standing time due to abnormal rainfall or inclement weather conditions, they will fall away and will not be considered in extension of time claims that may arise later during the contract period.

Table A1.2.3.4/1: Average delays due to inclement weather ('n')

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**Tot**
Inclement Weather Delays	2	2	3	3	3	3	3	4	3	4	3	2	**35**

Rain days allowed used >5mm days but has been adjusted to meet expected normal days worked per month as well as public holidays and normal December shut down as well as limited inclusion of days for <5mm.

The value "n" is the average number of working days per calendar month on which it is expected that inclement weather will occur at Chief Dawid Stuurman International Airport, as set out in Table

A1.2.3.4/1. The value "N" for this Contract, being the total number of inclement weather days allowed in the programme for the full Contract period, is **35 working days**. Paving shall not be permitted when the forecast or measured temperature is below the minimum temperature specified in the Works Requirements for the relevant material.

The Engineer's Representative will certify a shift loss due to cold weather, abnormal rain or adverse weather conditions based on the following criteria:

(i) No work was possible during the relevant shift on any item which is on the critical path according to the latest approved construction programme, given that sufficient temporary drainage of work areas was provided, or if

(ii) Less than 50% of the work force and plant planned for that specific shift could work.

Actual extensions of time due to inclement weather shall be agreed between the Engineer's and Contractor's representatives on the site. The agreed shifts or parts thereof shall be recorded at the bi-weekly site meetings and adjustments made to the contract period on a bi-weekly basis by extending the contract period according to the number of shifts lost less the allowance 'n'. At the end of the contract, the Engineer shall prepare a variation order to formalise the payment of the accumulated delays in excess of the allowance due to inclement weather.

Extension of time resulting from delays during shifts caused by operations of the Airport shall be allowed for in the contractor's programme. The number of working days to be allowed for in the Contractors programme is 20 days for the full contract period. The criteria listed in (i) and (ii) above will also apply to this extension of time. Losses within the 20 days delay period are deemed to be covered in the rates tendered for the items of work. **No extension of time, with associated costs, will be claimable until such time that the 20 days has lapsed**.

Time lost during shifts shall be agreed between the Engineer's and Contractor's representative on site. The agreed shifts or parts thereof shall be recorded at the bi-weekly site meetings and adjustment made to the contract period on a bi-weekly basis by extending the contract period according to the number of shifts lost less the allowance. At the end of the contract, the Engineer shall prepare a variation order to formalise the payment of the accumulated delays due to Airports operations. Losses for the first half-hour of delay are deemed to be covered in the rates tendered for items of work.

If the approved total extension of time (for delays due to inclement weather and Airport operations) extend the completion date beyond the start of the contractor's holiday in December, the holiday period shall not be considered as working days. Any remaining extension of time at this date shall be calculated

from the first statutory working day in January the following year, provided that the contractor has shown in his programme that he intends to close during the traditional Christmas/New Year break."

A1.2.3.10 Notices, Signs and Advertisements

Delete the final paragraph and replace with the following:

"All signboards erected in accordance with the drawings or as approved advertisements for the Contractors establishment, shall be removed at the same time as the Contractors de-establishment. Payment Item C1.3.1 for the final instalment of 15% of the tendered lump sum shall not be made unless all the advertisements, notices and temporary signs have been removed."

A1.2.3.21 Water

Add the following to the first paragraph:

"Water for construction purposes will be the primary responsibility of the Contractor to secure and bring to site. The Client may allow the Contractor to draw if there is a connection close by the site camp at times as back up option as and when water is available, but this will have to be purchased by the Contractor. If this is desired, the contractor will include in his rates for any connections, couplings or a standpipe and will provide a water meter to measure the water used for construction purposes. Water will be purchased from ACSA at rate per kilolitre based on the current municipal rate. The contractor shall allow in his rates for any annual municipal increases by the municipality. ACSA will invoice the contractor on a monthly basis for use of water."

Add the following new subclause after A1.2.3.23:

"A1.2.3.24 Reference manuals, other specifications and test methods

In various chapters of this Standard Specification, reference is made to Manuals, other specifications, and test methods. If not otherwise indicated in the Contract Documentation, the latest published Manual, other specifications, and test methods at time of close of tender will apply. Any changes to be implemented on a project as a result of revisions to manuals, other specifications and test methods, will be handled in terms of the Conditions of Contract.

Certain TRH and TMH documents are published as Sabita Manuals/TRH or Sabita Manuals/TMH publications. Where reference is made to the TRH or TMH document, it shall be read as referring to the latest version of the Sabita Manual/TRH publication or Sabita Manual/TMH publication, respectively."

Add the following subclause.

"A1.2.3.25 Contractor's escorts

Escorts will be provided by ACSA to lead the construction team onto site and to serve as official communications port between the construction team and Air Traffic Control or Airport Management. The construction team will not be allowed to enter or operate on the airside facilities unless being escorted by a qualified ACSA escort.

Under special circumstances, the Contractor may be allowed to nominate one or more persons (own site management staff or others) to accept the duties and responsibilities of an escort if and when required by the Employer. The following conditions will apply:

(a) The nominated person/s (Contractor's escort) need to have passed the applicable training and examination as specified by Airport Management (including induction course, radio communications, etc.).

(b) The Contractor's escort shall have a vehicle suitably equipped for driving airside. Equipment shall include amongst others a suitable communication device as specified by ATC required to communicate with Air traffic Control and Airport Management, signage and lights.

(c) The Contractor's escort may only be used if Airport Management is not able to provide the required escort services if and when required by the Contractor. The Contractor needs to be provided with written approval by the Engineer before the Contractor's escort will be allowed to substitute the official airport management's escort.

(d) The Contractor's escort shall at all times be in radio contact with Air Traffic Control and the Engineer's safety controller and physically with the construction team. He will not be allowed to leave the site until such time that he has been relieved of his duties by a replacement escort and if approved by Air Traffic Control.

The Contractor will be able to recover the cost of carrying out the duties and responsibilities of the Contractor's escort in the Bill of Quantities. The cost of lights and radio's must be included under Pay Item C1.3.1."

A1.2.7 EXECUTION OF THE WORKS

A1.2.7.1 PROGRAMME OF WORK

(c) Scheme 2

Add the following to the clause:

When drawing up his programme, the Contractor shall, inter alia, take into consideration and make allowance for:

(i) Working times and all other constraints stated in Volume 5.
(ii) Requirements of new Clause A1.2.7.6.
(iii) Expected weather conditions and their effects (Clause A1.2.3.4).
(iv) Known physical conditions or artificial obstructions.
(v) The accommodation and safeguarding of public and air traffic.
(vi) Dealing with, altering and installing services.
(vii) The work to be undertaken by any sub-contractors. This work must be integrated into the programme of the main contractor.
(viii) All other actions required in terms of this contract.
(ix) Interim milestone dates and restrictions on the extent of work areas available at a given time (Section C3.5.1).
(x) Airside access for "normal hours" working as follows (if required):

- Monday – Sunday: N/A, Consideration may be made for the GA area on times when there is low usage.

(xi) Airside access for "after hours" working as follows:

- Monday – Sunday: On 22:00 hrs and Off 03:00 hrs unless arrangements are made and it is agreed.

The above hours of access to airside may be later due to delayed aircraft etc. In addition, the vacation times on Saturday and Sunday mornings may be extended by 1 hour and 2 hours respectively. For programming purposes, the above times should be adopted.

The following details shall be submitted together with the programme:

(i) The number of working hours per day, working days per week, assumed holiday or shut down periods on which the programme is based.
(ii) The overall labour and major plant resource levels on which the programme is based.
(iii) The detailed traffic and construction equipment accommodation proposals on which the programme is based.
(iv) Sequence of work area closure to air traffic.

The Contractor shall base his initial programme of work on the scope of the work as described in the Scope of Works and the Bill of Quantities. This programme shall be reviewed on a regular basis by the Contractor in accordance with changing circumstances, delays and amendments to the work ordered by the Engineer as a result of further examinations made by him.

Minor revisions to the approved programme may be introduced from time to time by mutual agreement between the Contractor, and the Engineer. Should the Engineer believe that a major revision of the programme is required, the Contractor will be notified in writing and a revised programme shall be submitted within two weeks of receipt of such a notification.

It should be noted that it is in the Contractor's interest to provide a comprehensive programme giving as much information as possible about the times allowed for the various activities as well as resources or other limitations affecting the programme, since the approved programme may be used to evaluate any claims in terms of the General Conditions of Contract for extensions of time.

Monthly Meeting Programme:

The Contractor shall submit to the Engineer, before each monthly site meeting (or whenever instructed) copies of the following:

(i) The Contract programme with progress charts and programme graphs updated to reflect the actual progress to date.
(ii) A summary of progress on site over the week preceding the site meeting. The report shall be in the form of a detailed narrative to the Contract programme.
(iii) Details of activities running late, indicating what steps have been or will be taken to ensure that the work is completed within the specified time.
(iv) A report on all labour, plant and materials on site.
(v) An Incident and or Accident Report that is fully detailed.

Weekly Meeting (Fortnightly Rolling) Programme)

This programme will be presented at the weekly meetings and will show the work programmed over the next fortnight. It will be updated weekly. This programme will show the activities planned for each shift in a specific area, and will be subject to correlation with flight-schedules by the Airport Manager. The programme will show actual, projected and previous work.

Add the following subclause:

(e) Safety and Contingency Plan

- Within 14 days of award of the contract the Contractor shall draw up and submit a detailed Construction Method Statement addressing i.e. safety and contingency plan to ACSA for approval. Once approved, the Construction Method Statement will form part of the Procedure Manual for Working Airside (Volume 5). The method statement shall include:
-

(i) All measures to be implemented to comply with the requirements of the OHS Act (C3.7.1), Environmental requirements (C3.7.2) and the Procedure Manual for Working Airside (Volume 5).

(ii) A contingency plan to deal with shifts interrupted by inclement weather, construction equipment breakdowns or emergency closures of the work areas.

(iii) Special measures, such as back-up plant, to be implemented in normal shifts to comply with the specifications.

No work on the airside will be allowed until the Employer has approved the contractor's Construction Methodology Statement.

The cost of complying with the ACSA approved method statement is deemed to be covered by the tendered rates for the contractor's general obligations.

The scope of work requires the temporary closure of certain facilities on the airside. The closure of any facilities and the period of such closures shall be arranged with the air and surface traffic control authorities. Minimum notification periods are included in Volume 5.

A1.2.7.2 Setting out of the Works and the protection of beacons

Add the following to this clause:

"In order to comply with Clause A1.2.7.2 of the Specification the Contractor shall contract or employ a professional land surveyor and supporting team who will check the reference and level beacons. Agreement shall be reached with the Engineer on the values of the beacons to be used. It is the Contractor's responsibility to maintain and protect all reference beacons."

"There are a limited number of official reference and level beacons on the airport. Where necessary the Contractor shall place additional reference beacons on all sides of the work areas for accurate setting out and levelling purposes. These beacons shall be placed in concrete, marked and certified

by a professional land surveyor. Beacons shall be check-levelled during construction to confirm the accuracy when instructed by the Engineer."

"All existing paint markings shall be referenced prior to any milling or paving activities for setting out after the completion of the overlay. The contractor shall provide a survey of the existing markings to the Engineer who shall then review and amend as necessary before providing the final marking drawings. Setting out of the final paint marking positions must be done as specified on these supplied drawings. These shall be checked and agreed with the Resident Engineer in writing before final application."

Add the following new clauses:

A1.2.7.6 Project criteria and requirements at operational airports

Note the special Safety Regulations in Volume 5 will strictly apply to this Contract. In the case of conflict with the following clauses Volume 5 will supersede this section.

Where work has to be executed on or in the vicinity of an operational airport, such work shall be subject to various special conditions and regulations as listed below in order to guarantee and safeguard the operation of the airport at all times.

The following criteria should be borne in mind when the programme is compiled

(a) Airport management and air traffic control responsibilities

The Airport Manager (AM) and the Air Traffic Controller (ATC) are ultimately responsible for the safe and efficient operation of the airport.

The AM or designated representative will in his official capacity have authority to give the Contractor verbal or written orders on matters concerning the operation, security or safety of the airport and the Contractor shall, after having informed the Engineer of the orders, carry out the instructions as if issued by the Engineer.

The ATC is responsible for the safe movement of all aircraft traffic, both in the air and whilst on the ground. The ATC shall at all times have absolute authority regarding the movement of any construction personnel, vehicles or equipment, where such movement takes place within the obstruction free areas of existing facilities, or may affect the safe movement of the air traffic, and his instructions shall be implicitly obeyed. The ATC's decision regarding the acceptability and programming of the Contractor's activities within the above-mentioned areas shall be taken into account and may result in reprogramming

of work, where considered necessary.

All liaison with the AM or ATC shall be arranged through the Engineer and the Contractors Traffic Safety Officer.

(b) Radio communication on the airport

Refer to Clause 14 of Procedure Manual for Working Airside *Volume 5.*

Two handsets must be provided to the Engineer for this purpose and must be handed over in a working condition to the Employer at the completion of the Contract. The Contractor's traffic safety officer and the Construction Manager shall complete a radio operator's basic course at ACSA before commencement of the works. The Contractor shall be responsible for any maintenance costs, damages or loss of these sets. Payment Item C1.2 shall be deemed to include all costs of the Contractor in this regard (including training of relevant personnel).

(c) Airport security

Refer to Clause 16 of Procedure Manual for Working Airside *Volume 5.*

(d) Movement on the airport

Refer to Clause 17 of Procedure Manual for Working Airside *Volume 5.*

The crossing of any operational facility on the airport will require special control as ordered by the ATC or the airport manager and will be limited to pre-determined points as indicated on the drawings or instructed by the Engineer. The required controls may include any of the following:

(i) Unrestricted crossings used by the Contractor should be linked with a pre-warnings system that notifies the Contractor that the facility will be required for airport use within a certain period after notification.

(ii) Flagmen at crossing points, allowing movements across the facility whenever aircraft traffic permits.

(iii) Radio controlled crossing points, where movements across the facility may only take place after receiving clearance from the ATC.

(e) Additional requirements regarding construction activities

(i) Identification numbers

All construction vehicles and self-propelled equipment to be utilised within the airport security area shall be fitted with a boldly displayed identification number (minimum dimension 600 mm, line thickness 75 mm) on a white background on either side of the vehicle or equipment. A record of all identification numbers and related vehicles shall be available at all times for perusal by the authorities or the Engineer. The cost for providing and using these identification numbers must be included under Pay Item C1.3.1.

(ii) Crossing points

The surface of existing facilities at crossing points shall be absolutely clean whenever aircraft uses them. This will require the full-time presence of a cleaning team at such crossings to remove all debris, stones or other material from the surfaces. The Contractor shall be responsible for any damage to aircraft or other equipment as a result of failure to comply with this requirement.

(iii) Barricades, lights and markings

The Contractor shall provide, erect, maintain, move and finally remove temporary barriers, fences and markings all as prescribed by the airport authorities or as shown on the drawings. The work shall include the placing of temporary barriers where runways or taxiways have been closed as well as lights at these points to facilitate night-time interpretation of the situation. It may also include the painting of markings and the final removal thereof.

(iv) Dust and pollution

The Contractor shall control dust in all working areas, at borrow pits and on haul roads to the satisfaction of the airport authorities. No pollution from machines, batching plants, mixers, workshops or other sources (such as the breaking up of existing work) will be tolerated. Fires may only be lit after the Contractor has obtained written permission from the airport authorities who will also supervise the fires.

The Contractor shall keep the entire site of the works, including his own camp site, in a neat and clean condition to the satisfaction of the airport authorities.

(v) Windrow of material

During the improvements of the side strips for both runways, materials will be temporarily windrowed outside the work areas. No windrows shall be allowed within 37.5 m of the runway edge of both runways of any threshold. Windrow heights shall also be managed to ensure that they do not exceed ACSA maximum obstacle height requirements.

(f) Traffic safety officer

Refer to Clause 9.8 of Volume 5.

A traffic safety officer shall be appointed by the Contractor. This person shall be a senior member of the site management team who has been duly authorised to perform his duties on his own initiative and to exercise control over others. He must also complete a communications training course successfully at the Airport Control Centre after which a license will be issued to him. He shall be on site full-time during the execution of the works and general site safety shall at all times be his first priority. The traffic safety officer shall liaise directly with the Engineer, airport control and air traffic control regarding matters related to safety.

In addition to the tasks specified in the Airside Manual the traffic safety officer will also be required to perform the following duties and this list shall not be deemed to be complete:

(1) Responsible for keeping the traffic requirements up to specification 24 hours a day, 7 days a week.
(2) Inspect and report to the Engineer on the state of all required signs and marks (and all traffic accommodation facilities) as often as the Engineer may require but, in any event not less than twice a day.
(3) Responsible for exercising control over the safe movement of personnel vehicles and plant on site according to the instructions of air traffic control.
(4) Attend to the training and performance of flagmen and all other personnel involved in the control of traffic.
(5) Responsible for compliance with prescribed measures at aircraft crossings.
(6) Responsible for compliance to air traffic controller's instructions.
(7) Responsible for daily final inspection of work areas prior to re-opening thereof.

(g) Provision of Permits

The Contractor shall note that it is a condition of the contract that he applies for and obtains the required permits for all persons, equipment and vehicles to be utilized during the construction of the planned works. Refer to Clause 17.2 of the Airside Manual (Volume 5).

The onus shall be on the tenderer to verify these costs prior to completing his tender, but the following are typical costs which could apply:

Vehicles Permits	
Duration	*Cost*
Permanent	R 975.14
Add on charge	R 4099.49
Temporary (1 Day)	R 35.04
Temporary (2-3 Days)	R 96.56
Temporary (1-3 Months)	R 243.57
Temporary (4-6 Months)	R 481.14
Penalty	
Lost Permit	R1806.69

Personal Permits	
Duration	*Cost*
Ad Hoc (1-5 Days)	R 37.59
Permanent	R 208.52
AVOP	58.45
Damaged card re-print	
1st Lost card	R 116..92
2nd Lost card	R 230.74
Courses	
AVOP Course	R410.00
Airside Induction	R410.00

A1.2.8 WORKMANSHIP

A1.2.8.1 Process quality control

Add the following new subclauses:

"The Contractor shall submit a proposed Quality Management Plan in accordance with ISO 9002 for this contract (Form C9). Confirmation of the Quality Management Plan shall be submitted to the Engineer, for his approval within two weeks of the commencement date and prior to the commencement of construction activities. Once accepted by the Engineer the Contractor shall not deviate from it unless written notification of proposed changes have similarly been submitted and approved. The system shall record the lines and levels of responsibility and indicate the method and frequency by which testing procedures will be conducted.

The Contractor shall also appoint a Quality Manager who shall ensure that the Contractor's staff comply with the requirements of the Quality Management Plan.

Payment for work done will not be made until the results of the Contractor's process control testing have been submitted and the Engineer has approved the work. The Engineer shall conduct such tests as he may deem necessary to verify the process control test results and shall retain all rights as determined in the General Conditions of Contract related to bad workmanship or unacceptable materials. This shall also be applicable to accepted alternative (mix) designs and related specifications."

Insert the following new subclauses:

(a) "External testing house

An external testing house will be appointed by the Engineer to undertake verification quality control testing of construction materials and workmanship by means of laboratory testing at an external testing facility to confirm results of the Independent Site Laboratory on a selected sampling basis. All sampling and testing by the external testing house will be done on the instruction of the Engineer. Materials will be sampled on site or at commercial supply sources or at the contractor's asphalt or concrete plant and will be tested the following day. Results will be reported to the Engineer for interpretation and possible action. The external testing house will invoice the Contractor (nominated subcontractor) for the cost of material sampling and testing and for reporting the test results to the Engineer. This cost will be reimbursed under the provisional sum item on approval of the Engineer.

The Contractor will be required to accommodate and support the sampling procedures of the external testing house during the course of the contract. Representatives of the Engineer and the testing house will be allowed to inspect any stockpile, storage facility or processing activity for the purpose of quality control.

(b) External testing house used as independent site laboratory

The contract will utilize an external testing house as an independent site laboratory. Testing shall be undertaken by a combined external testing house laboratory facility for process control (where the process control testing can be utilised as acceptance control), acceptance control and correlation testing subject to the following requirements laid down by the Employer:

(i) The Contractor accepts the test results of the combined laboratory. Should there be any doubts with regard to certain test results, this will be settled by an independent laboratory mutually agreed upon. The cost in such cases will be to the account of the party at fault.

(ii) The contractor accepts that the Engineer will be in charge of the combined laboratory.

(iii) The external testing house must supply a suitable qualified material technician (with at least 10 years asphalt paving quality control experience). The material technician will be responsible for paving quality control (that includes but not limited to temperature control of asphalt, recording of compaction effort, recording of stoppage and prevention of cold joints, inspection of the surface prior to tacking). This material technician must be approved by the Engineer before commencement of any works.

(iv) The Contractor must install suitable infrared sensors on the paver to record the material temperature on a continuous basis and these results must be available to the external laboratory and Engineer.

C1.2 GENERAL REQUIREMENTS AND PROVISIONS

PART C: MEASUREMENT AND PAYMENT

Add the following pay item:

"Item **Unit**

C1.2.10 Dispute Adjudication Board (DAB)

C1.2.10.1 Employer's contribution to DAB (50%) .....prime cost (PC) sum

The unit of measurement for item C1.2.10.1 is the prime cost sum. Payment of the prime cost sum shall be 50% of the amounts invoiced from the appointed DAB. No sum for overhead charges and profit is payable for this item."

PC1.2.11 Airside induction courses and permits……..……Lump Sum

The tendered lump sum shall represent full compensation for all costs incurred for the attendance of the safety induction course for all the Contractors personnel and for all costs associated with the provision of all necessary permits as required by ACSA for the completion of the project.

No additional payment except that tendered in this item will be granted for permits, airside courses, radio license courses or for any vehicle license courses or permits associated with the due completion of this project and includes for any costs incurred for these during the maintenance period.

Payment of the lump sum tendered will be made in two instalments:

(1) The first instalment, 70% of the lump sum, will be made in the first payment certificate after the Contractor has made a substantial start with construction in accordance with the approved programme.

(2) The second instalment, 30% of the lump sum, will be paid when the value of the work reaches one half of the tendered amount, excluding contingencies and price adjustments."

Add the following pay item:

PC1.2.12 Provision for CIDB B.U.I.L.D. Program ……..Month

Tendered rate should be for full compensation for all costs to be incurred for complying to the requirements and specifications of the CIDB B.U.I.L.D. programme. In this project, only the standard for Developing Skills through Infrastructure Contracts will be applicable, wherein the Contractor will be provided with a minimum contract skills development goal (0.25% of the construction value for CE works) that the Contractor should meet by the end of the contract. This amount will be allocated for skills development to be achieved in the performance of a contract in relation to the provision of different types of workplace opportunities, linked to work associated with a contract culminating in or leading to:
(a) A part or full occupational qualification registered on the national qualification framework,
(b) A trade qualification leading to a listed trade,
(c) A national diploma registered on the National Qualification Framework and /or,
(d) Registration in a professional category by one of the professional bodies.

Payment will be made monthly subject to proof of full compliance to the requirements and specifications that needs to be provided in a monthly progress report.

SECTION 1.3: CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS

PART A: SPECIFICATIONS

A1.3.3 GENERAL

A1.3.3.1 Construction camps

Add the following to the first paragraph:

"The site for the contractor's office and stores as well as the engineer's office and laboratory will be within ACSA's premises (Landside) and is indicated in the Site Layout Plan Drawing (Volume 4). The contractor shall provide 24-hr security at the camp site as well as a dedicated smoking area under roof as required in terms of legislation. The cost of this will be deemed to be included in item C1.3.1."

Add the following new subclause:

"A1.3.3.5 Contractor's ablution facilities

The Contractor shall provide sufficient portable chemical latrine units at the work sites as required by legislation i.e. 1:30 employees and catering for males and females. The latrine units shall be serviced daily and kept in a hygienic and orderly state to the approval of the Engineer. No separate payment shall be made for this requirement and the costs thereof shall be deemed to be included in the rates tendered for the Contractor's time-related obligations.

C1.3 CONTRACTOR'S SITE ESTABLISHMENT AND GENERAL OBLIGATIONS

PART C: MEASUREMENT AND PAYMENT

"Item **Unit**

C1.3.1 Contractor's general obligations.....

Insert the following paragraph after the fourth paragraph:

"Should the combined total tendered for subitems (a), (b), and (c) exceed 15% of the tender sum, the tenderer shall state his reasons in writing for tendering in this manner.

If the tenderer should require additional compensation for his obligations under section C1.3 (over and above the total tendered for item C1.3.1 by including such additional compensation in the tendered rates and/or lump sum of items in the schedule of quantities, these items and the value of such additional compensation shall also be indicated in writing in a letter."

Add the following:

"The tendered rate per month for Item C1.3.1.3(c) represents full compensation for that part of the contractor's general obligations, which are mainly a function of construction time. The tendered sum will be paid monthly, pro rata for parts of a month, from the Commencement Date until the end of the period for completion of the works, plus any extension thereof as provided in the general conditions of contract, provided that…".

Add the following at the end of this pay item:

"The amount payable to the contractor for time related costs arising from extensions of time granted by the employer, where the contractor is fairly entitled to such compensation in terms of the General Conditions of Contract, shall be calculated as follows:

(i) Account shall be taken of all time related items scheduled in C1.3 Part C: Item C1.3.1

(ii) All pay items for which the unit of measurement is "month" shall be deemed to be based on a 23-day working month."

Add the following to this pay item:

"The rate will include for the cost of all Escort requirements as specified in A1.3."

SECTION 1.4: FACILITIES FOR THE ENGINEER

PART A: SPECIFICATIONS

A1.4.7 EXECUTION OF THE WORKS

A1.4.7.1 Offices and laboratories

a) General

Add the following:

"The Resident Engineer's offices shall, amongst other things, have one room at least 6 x 3.5 meters to serve as a conference room. All offices and laboratories shall be supplied with approved burglar proofing."

A1.4.7.3 Services

The following subclause shall be added to clause A1.4.7.3 of the Specifications:

(c) First Aid

The Contractor shall provide a first aid kit at the site offices. No separate payment will be made and the Contractor shall allow for this in his tendered rates for accommodation for supervisory staff."

SECTION 1.5: ACCOMMODATION OF TRAFFIC

PART A: SPECIFICATIONS

A1.5.3 GENERAL

A1.5.3.2 General Requirements

Add the following to clause A1.5.3.2:

"This Contract is divided into limited occupation areas in order to allow for the airport to be fully operational during construction. All occupation areas will be over a short duration (e.g. for night shift works). The Contractor shall inform and obtain approval from ATNS and AM prior to closing any runway/taxiway for construction. The requirements of Volume 5 and Clause A1.2.7.6 shall be fully adhered to by the Contractor. The Contractor is also to note that escort services are to be provided by the contractor for vehicles entering the restricted area to areas where work is taking place (see Clause A1.2.3.24).

The construction works is schedule to be completed in one single phase. If the Contractor wishes to deviate from these details in any way, the Contractor shall request approval for such deviation and if approved shall keep the Airport Manager (AM) and the Engineer fully informed of changes."

Add the following new sub-clauses:

A1.5.3.15 Night work

All plant used on site shall be equipped with suitable lights including flashing amber lights to enable the work to be properly performed and controlled at night. Night work will only commence if, according to the Engineer, the Contractor provides all equipment, personnel and stand-by reserves to execute the work at night as if in normal daytime hours.

Payment shall be made under item C1.5.7 for provision of the lighting for the whole working site in work areas as specified above.

The Contractor shall provide for artificial lighting to ensure the proper execution of the work in terms of the contract. The artificial lighting shall be subject to the Engineer's approval and shall consist of at least the following:

(i) At least 3 floodlight towers per work area shall be provided when works are performed during

the night shift. A work area is defined as an area of radius 15 m in which night work is being done. The Contractor shall provide adequate lighting at night as specified for every work area. The light in a work area shall be a minimum of 75 lux.

(ii) The power systems shall comply with the Occupational Health and Safety Act No 6 of 1993 as amended, and the Standard Regulation for Wiring of Premises of the South African Institute of Electrical Engineers.

No additional payment will be made to the Contractor over and above payment for the Contractor's general obligations for providing and maintaining all extra personnel and equipment for executing night work.

Upon request by the Engineer or his representative, the Contractor shall make available a mobile flood light tower for use by the Engineer's staff. Payment for this request shall be made under item C1.5.15.

SECTION 1.6: CLEARING AND GRUBBING

PART A: SPECIFICATIONS

A1.6.7 EXECUTION OF THE WORKS

A1.6.7.6 Conservation of topsoil

Add the following paragraph to the clause:

"During the improvements of the shoulder areas strips for the runway, materials will be temporarily windrowed outside the work areas. No windrows shall be allowed within 37.5 m of the runway edge within 150m of any threshold. Windrow heights shall also be managed to ensure that they do not exceed ACSA maximum obstacle height requirements."

SECTION 1.7: LOADING AND HAULING

PART A: SPECIFICATIONS

A1.7.1 SCOPE

Add the following to Clause A1.7.1:

"No overhaul will be paid to the Contractor for transporting any materials whatsoever, whether obtained from commercial sources, designated borrow areas or any other source of material supplied by the Contractor and for the removal of spoil material from the airport premises."

"The designated stockpile and spoil areas (temporary) will be provided by the AM within the boundaries of Chief Dawid Stuurman International Airport."

A1.7.3.2 Haul and construction access roads

Add the following paragraph to the clause:

"The usage and selection of haulage roads on the employer's (ACSA) premises and on the site will be coordinated on a daily basis between the Contractor, the Engineer's Representative and the Employer's representative."

COTO CHAPTER 2: SERVICES

SECTION 2.1: GENERAL REQUIREMENTS AND TRENCHING FOR SERVICES

PART A: SPECIFICATIONS

A2.1.3 GENERAL

Add the following to the clause:

"The owners of services affected under this Contract are all under the control of the Airports Company South Africa whose representative must be contacted regarding the location of all services in the construction area. Inspections shall be undertaken by means of the authority's service detectors and such inspections shall be attended by the Contractor and the Engineer's Representative. No payment shall be made to the Contractor for attending these inspections.

The following existing surface and subsurface services are not known and exact locations should be determined with service detection and inspection.

Service	Approximate Location
Runway centre lights	Lights and cables run across the runway
Main electrical supplies	Main supply cables, crossing below the runways
Medium voltage cable routes	Alongside runways
Communication cable routes	Crossing below runway surface

Protection and/or relocation of certain services will be required. The Engineer will issue instructions after location and exposure of these services. No large compaction equipment will be allowed to work within 10 m of any ground-mounted frangible light fixtures or any other navigational equipment without approval by the Engineer. The contractor shall allow for a 1,5 ton sit-on roller or similar compaction equipment approved by the Engineer to work within 10 m of the navigational equipment. No additional payment will be made for work close to the equipment as specified above."

"The Contractor shall also be liable for any loss or consequential loss suffered by the owner of a service which is damaged by the contractor's operations, e.g. loss of the ILS or Runway lighting due to a power failure."

"This work is planned to be executed in close proximity of approach, edge lights and runway closure crosses and must be executed without interfering with the operation of these lights. The contractor shall

ensure that the position of the cables are known to himself and his personnel and shall take all reasonable care to avoid damage to the cables, lights or transformers. Protective covers and markers shall be used as required to protect the lights from being damaged or covered by products (e.g. bituminous) whilst the work is carried out. No additional payment will be made to protect the lights.

Should existing services be damaged, the contractor shall give adequate notice to all concerned and leave enough time after completing a particular work shift to allow for the reinstatement of the cables before opening the runway to air traffic.

Where applicable, existing edge lighting and electrical systems for the runway and taxiways need to be kept operational during the course of the project. A number of these lights will need to be raised to match the new level of the surfacing. Payment for this work will be covered under pay item C2.4.5."

COTO CHAPTER 3: DRAINAGE

3.2 CULVERTS

PART C: MEASUREMENT AND PAYMENT

Add the following payment item:

Item	Description	Unit
PC3.2.28	Waterproofing of prefabricated culvert joints with a 500 mm wide composite membrane strip consisting of rubberized asphalt and cross-laminated high-density polyethylene film	metre (m)

Add the following paragraph before the last paragraph:

The unit of measurement for the waterproofing of prefabricated culvert joints shall be the linear metre of joint treated with the approved composite membrane strip, measured along the centreline of the joint.

The tendered rate shall include full compensation for the supply and application of the membrane, surface preparation, overlaps, rolling, and protection against damage during backfilling.

3.3 CONCRETE KERBING AND CHANNELING, ASPHALT BERMS, CHUTES, DOWNPIPES, AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS

PART A: SPECIFICATIONS

A3.3.7 EXECUTION OF THE WORKS

A3.3.7.1 Drainage structures

Add the following as a new sub-clause:

"**p) Armoflex block lined open drains**

The exposed surfaces of the Armoflex block linings of open drains shall comprise factory-produced, machine-compressed concrete blocks of the Armoflex 180 type or similar approved articulating concrete block system, laid strictly in accordance with the manufacturer's installation specification and as directed by the Engineer.

The use of Armoflex blocks, including the preparation of surfaces, bedding, geotextile placement, block installation, anchoring, finishing and reinstatement, shall be as shown on the drawings and as specified herein.

(i) Preparation of exposed surfaces

The base and side slopes of the drain shall be excavated, shaped and compacted to the required lines and levels.

The trimmed surface shall be smooth, firm and free from vegetation, roots, stones and other debris, and compacted to not less than 93 % of MDD.

After trimming, the finished surface shall not deviate more than 25 mm from a 3 m straight edge when measured in any direction.

Where unsuitable material is encountered, it shall be replaced with approved selected material compacted to 93 % of MDD.

(ii) Geotextile

A nonwoven, needle-punched synthetic geotextile filter membrane manufactured from UV-stabilised polypropylene or polyester fibres shall be placed over the prepared surface of the drain, with overlaps of not less than 250 mm. The geotextile shall act as a filter and separator, preventing migration of fine soil particles from the subgrade while allowing adequate seepage through the fabric.

The geotextile shall have minimum average roll values not less than the following:

- Mass per unit area: 135 g/m² (ASTM D5261 / SANS 9864)
- Grab tensile strength: 6 kN/m (ASTM D4632 / SANS 1525)
- Static puncture strength: 1.2 kN (ASTM D4833 / SANS 12236)
- Apparent opening size (O95): 150 µm – 250 µm (ASTM D4751 / SANS 12956)
- Permittivity: 1.0 s^{-1} (ASTM D4491 / SANS 11058)

The geotextile shall be resistant to biological and chemical degradation within a pH range of 4 to 9, and shall not be affected by rot, mildew, or exposure to common soil chemicals. The material shall be delivered and stored in a manner that prevents exposure to direct sunlight and mechanical damage.

The geotextile shall be laid with care to avoid tearing, wrinkling, or displacement prior to placement of the Armoflex blocks.

Where required, a bedding layer of clean sand not exceeding 50 mm in thickness shall be provided to obtain a smooth surface and to prevent puncturing of the membrane.

(iii) Laying of blocks

The Armoflex blocks shall be laid by hand in a half-bond interlocking pattern, with the shorter dimension in the direction of flow.

Blocks shall be placed neatly, ensuring full interlock and close contact with the underlying geotextile. Blocks shall be interconnected by 3.1 mm diameter galvanised steel wire threaded through the horizontal ducts and twisted neatly to form continuous longitudinal and transverse connections. Cut blocks shall be used only where necessary and all cut faces shall be neatly trimmed.

The finished surface shall be even and true to line and grade. Deviation shall not exceed 25 mm from a 3 m straight edge, and no individual block shall protrude more than 10 mm above adjacent blocks.

(iv) Anchoring

The lining shall be anchored at the top and sides of the drain in accordance with the drawings and the manufacturer’s instructions.

- Concrete anchor beam:
  Where specified, the blocks shall be secured by a reinforced concrete beam not less than 400 mm deep × 250 mm wide, cast in situ along the top edge of the lining.
  The beam shall contain Y8 bars at 300 mm centres and have a minimum 28-day compressive strength of 20 MPa.

- Y-fencing standards:
  Alternatively, anchoring may be achieved by 1.8 m long Y-fencing standards, driven into the ground and securely attached to the interlocking wires at 2 m centres.

Construction joints shall be provided at intervals not exceeding 5 m or as directed by the Engineer.

(v) Backfilling and grassing

On completion of the lining, all anchor trenches and disturbed areas shall be backfilled and compacted. Where specified, the surface shall be topsoiled and grassed immediately after completion to provide protection and aesthetic integration with the surroundings.
Hydroseeding or manual seeding shall be carried out as specified or as directed by the Engineer."

PART C: MEASUREMENT AND PAYMENT

Add the following payment subitem:

Item		Description	Unit
C3.3.8		**Lining for open drains:**	
	PC3.3.8.1	Armoflex blocks	
	(a)	Armoflex lining for open drains, including preparation of surface, trimming, bedding, installation of Armoflex, anchoring, and all necessary fittings and overlaps complete as specified	square metre (m^2)
	(b)	Supply and install geotextile membrane	square metre (m^2)

Add the following paragraph before the last paragraph:

The unit of measurement for Armoflex lining shall be the square metre of completed Armoflex lining, measured over the finished surface area of the drain lining as shown on the drawings or as instructed by the Engineer.

The tendered rate for Armoflex lining shall include full compensation for all labour, materials, plant, tools, equipment, fittings, anchors, overlaps, trimming, cleaning, and other incidental work necessary for the proper completion of the lining as specified.

Measurement and payment for the geotextile membrane shall be made separately under Sub-item (b) per square metre of geotextile supplied and installed complete.

COTO CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS

SECTION 4.4: COMMERCIAL MATERIALS

PART A: SPECIFICATIONS

A4.3.5 MATERIALS

Add the following after the heading:

All reclaimed asphalt used for this project shall comply with the specifications detailed in the Technical Recommendations for Highways 21:2017, *"Use of reclaimed asphalt in the production of asphalt."*

A4.4.7 EXECUTION OF THE WORKS

A4.4.7.1 Selection (design) of the stabilizing agent content

c) Cementitious stabilizing agent for chemical stabilization

Step 2: Determine the Initial Consumption of Stabiliser (ICS) of the material.

Add the following after the 1st paragraph:

"The ICS shall be determined for more than one stabilizer agent and the stabilizer agent to be utilized in Step 3 shall be selected by the Engineer based on the ICS results."

COTO CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION

SECTION 5.1: ROADBED

PART A: SPECIFICATIONS

A5.1.7 EXECUTION OF THE WORKS

A5.1.7.3 Normal roadbed treatment

Add the following new subclause:

"(j) Improvement of the runway strips

Electrical conduits and any other instrumentations shall be identified and where required protected against possible damage by the contractor. The contractor shall take cognisance of Clause A2.1.3 when working within the runway strips."

This section also covers the construction of the shoulder drainage improvements on the main runway and works to taxiways at Chief Dawid Stuurman International Airport."

SECTION 5.3: PAVEMENT LAYERS

PART A: SPECIFICATIONS

A5.3.5 MATERIALS

A5.3.5.2 Pavement layer thickness and compaction requirements

c) Crushed stone pavement layer compaction requirements (G1 to G4A and G5A materials)

Change the 2nd sentence to read:

"The density of the compacted crushed stone base layers shall be tested at depths of 50 mm, 100 mm and 150 mm to determine the compaction gradient throughout the layer. The density measured for each depth shall conform to the minimum compaction densities for crushed stone pavement layers as per Table A5.3.5-2."

SECTION 5.4: STABILIZATION

PART A: SPECIFICATIONS

A5.4.1 SCOPE

Add the following as a 3rd paragraph:

"The use of recyclers for cold in situ recycling purposes is also covered in this section, which includes cement, lime and emulsion of base layers consisting of gravel material as described in Clauses A4.4.7.1(c) and A4.4.7.1(d) in Chapter 4 of COTO"

COTO CHAPTER 9: ASPHALT LAYERS

SECTION 9.1: ASPHALT LAYERS

Add the following new sub-clause:

The Contractor must provide details of his proposed mix designs and designated supplier to the Engineer within 14 days after award of the Contract.

Final completed test results and proposed mix designs shall be submitted to the Engineer within 3 weeks of award of contract or within 2 weeks of commencement.

Texture depth (macrotexture), LCS, and friction shall be assessed on the accepted trial section(s) using the test methods and acceptance criteria stated in this chapter which should be aligned to ICAO Annexure 14 and the relevant Airport services Manuals.

Where the trial section does not comply with the specified macrotexture requirement, the permanent works shall not commence. The Contractor shall submit a corrective action plan for the Engineer's acceptance. Corrective actions may include surface texturing (hydro-cutting) and/or adjustment of the target grading within the approved tolerances, provided that the approved SMA mixture requirements (including air voids and moisture/permeability performance) are maintained.

The Engineer shall stipulate the final approved job mix formula (JMF) after trial section acceptance.

PART A: SPECIFICATIONS

A9.1.1 SCOPE

Add the following after the last paragraph:

For this contract:

- The wearing course shall be a gap-graded Stone Mastic Asphalt (SMA) with a stone-on-stone skeleton.
- The mix design, including volumetric properties and aggregate structure, shall follow AASHTO R46 and AASHTO M 325, read with Sabita Manual 35 (Appendix B) and the requirements stated in this supplement.
- Binder selection shall align with Sabita Manual 35. The polymer modified binder for this Contract shall be AP-1, or an approved equivalent. The binder (AP-1 or approved equivalent) shall demonstrate compliance to the required performance grade, including a high-temperature grade aligned to the 58 °C pavement design temperature and the 'Extreme' traffic category, by supplier certification and by independent verification testing when instructed by the Engineer.
- The mix shall achieve a maximum rut depth of 6 mm or less after 20 000 wheel passes in the Hamburg Wheel Tracking Test (HWTT), with a Stripping Inflection Point (SIP) of not less than 10 000 passes. The HWTT shall be conducted at a pavement design temperature of 58 °C.
- The Nominal Maximum Particle Size (NMPS) shall be 14 mm. The compacted layer thickness shall be not less than 50 mm.
- The pavement is classified for Extreme traffic loading, with cumulative loading exceeding 100 million equivalent 80 kN standard axles (E80s), and design traffic speeds exceeding 80 km/h. Mix Design Level III as defined in Sabita Manual 35 shall be used.

A9.1.3 GENERAL

A9.1.3.3 Trial sections

Add the following after the second paragraph:

For the SMA wearing course, the Contractor shall construct at least one trial section:

a) The trial section length shall be not less than 150 m for each paving width.
b) The trial section shall confirm plant process control, paver operation, surface appearance, roller pattern, and achieved in-place density.
c) Nuclear gauge correlation to cores shall be carried out during the trial section and the accepted correlation shall be used for process control during production.
d) Permanent works shall not commence until the trial section is accepted by the Engineer.
e) Plant trial mixes prior to paving trial section: Before paving the trial section, the Contractor shall complete plant trial mixes at BC, BC−0.3% and BC+0.3%, with Engineer witnessing permitted, and shall demonstrate compliance with the mix requirements before commencing the trial section.
f) Macrotexture and friction confirmation on trial section

   i. Macrotexture (texture depth) shall be measured on the trial section by an Engineer-accepted method. Unless otherwise stated in the Contract Data, the method shall be either:
      - sand patch (ASTM E965) to determine Mean Texture Depth (MTD); or
      - laser profile (ASTM E1845) to determine Mean Profile Depth (MPD).
   ii. The Contractor shall submit the proposed test method, equipment details, calibration evidence, test spacing, and reporting format to the Engineer before the trial section is paved.
   iii. Compliance shall be assessed against the acceptance value(s) stated in the Employer/Engineer airfield friction and texture requirements / Contract Data.

iv. Where macrotexture does not comply on the trial section, the trial section is nonconforming and shall be rectified and re-tested. Rectification may include hydro-cutting, subject to Engineer acceptance, followed by re-testing to confirm compliance.
v. Wet friction compliance shall be demonstrated in accordance with Clause A9.1.7.12 before opening and, where required by the Contract Data, on the trial section as part of acceptance.

A9.1.3.4 Weather limitations

Add the following after the last paragraph:

For the SMA wearing course, paving shall only be carried out when the atmospheric temperature and the surface temperature are above 10°C and rising, and the surface is dry and unfrozen. Paving and compaction shall only proceed when agreed weather monitoring and forecasting indicates no inclement weather is expected during the paving and compaction window, including the full planned paving run and the time required to complete rolling to the stop-rolling temperature. If rain, drizzle, fog deposition, or strong wind-driven cooling is expected within that window, paving shall not commence or shall be suspended if already started.

This requirement applies in addition to the general wind and temperature limitations in Clause A9.1.3.4.

A9.1.4 DESIGN BY THE CONTRACTOR

A9.1.4.2 Mix design requirements

Add the following after the last paragraph:

For the Stone mastic asphalt (SMA) wearing course for this contract, the project requirements are:

a) Design procedure
   i. The SMA mix design shall comply with Sabita Manual 35 (Appendix B) and shall use AASHTO R46 and AASHTO M 325 for laboratory procedure, reporting, and coarse aggregate structure checks.
   ii. The Contractor shall demonstrate stone-on-stone contact by verifying that VCA_{MIX} is less than VCA_{DRC}, using the breakpoint sieve appropriate to SMA14.
b) Nominal size and layer thickness
   i. NMPS: 14 mm (SMA14).
   ii. Minimum compacted thickness: 50 mm.
c) Required SMA mixture properties (minimum requirements)
   i. Air voids at design compactive effort: 4.0 % target.
   ii. VMA: not less than 17 %.
   iii. Effective binder content: not less than 6.0 % by mass of total mixture.
   iv. Draindown (ASTM D6390, at production temperature): not more than 0.30 %.
   v. Moisture susceptibility (AASHTO T 283): TSR not less than 80 % for SMA wearing course. Where airport/Employer requirements specify a higher minimum, the higher value shall apply.
   vi. Where Zycotherm is specified or proposed, TSR and other moisture-related performance testing shall be undertaken on mixtures produced with the proposed Zycotherm dosage stated in the job mix formula (JMF).

d) Performance test requirement
   i. Hamburg Wheel Tracking Test (AASHTO T 324): rut depth not more than 6 mm at 20 000-wheel passes.
   ii. Stripping Inflection Point (SIP): not less than 10 000 passes.
   iii. Test temperature: 58 °C.
e) Mix design submission
   i. The Contractor shall submit the mix design on the latest D3 Design form and include supporting laboratory test reports for all requirements in sub-clauses (a) to (d).
   ii. The mix design report shall state the proposed job mix formula (JMF) target grading, binder content, stabilising additive type and dosage, mineral filler content, and all production tolerances.
   iii. No SMA wearing course shall be produced for permanent works before Engineer approval after an accepted trial section.

A9.1.5 MATERIALS

A9.1.5.2 Bituminous binders for asphalt mixes

Add the following after the last paragraph:

For the Stone mastic asphalt (SMA) wearing course for this contract, the project requirements are:

a) Binder class for SMA wearing course
   i. The binder shall be AP-1 polymer modified binder, or an approved equivalent, selected in accordance with Sabita Manual 35 (Appendix B) for Extreme traffic loading and a pavement design temperature of 58 °C.
   ii. The binder (AP-1 or approved equivalent) shall comply with the required performance grade, including a high-temperature grade aligned to 58 °C and the 'Extreme' traffic category, as applicable to the binder system used, and as supported by the requirements and test methods referenced in Sabita Manual 35 (including TG1 and applicable SATS).
   iii. Prior to use, the Contractor shall submit the supplier product data sheet and a certificate of compliance for each proposed binder (AP-1 or approved equivalent) showing the performance grade compliance and the test results used to demonstrate compliance.

Approved equivalent means a polymer modified binder that the Engineer accepts as providing equal or better performance for the SMA14 wearing course under the 58 °C design temperature and Extreme traffic category, based on the submitted certification and any verification testing results.

b) Certification and traceability
   i. Each binder delivery shall be accompanied by a certificate of compliance stating binder class (AP-1 or approved equivalent), modifier type, batch number, dispatch temperature, and the test results required to demonstrate compliance with the required performance grade in terms of Sabita Manual 35 and its referenced documents.
   ii. The Contractor shall make provision for sampling and independent verification testing of the delivered binder when instructed by the Engineer, in accordance with Sabita Manual 35 and the referenced documents.
   iii. If independent verification results do not confirm the certified performance grade, the affected binder and any asphalt produced with it shall be treated as nonconforming, and the

Contractor shall submit a corrective action plan for Engineer acceptance before further production.

c) Storage, handling and contamination control
   i. Binder storage temperature, circulation and maximum storage time shall comply with the supplier's declared limits for AP-1 and the guidance in Sabita Manual 35, and shall be recorded daily.
   ii. Direct flame heating of binder tanks is not permitted. Heating shall be indirect and controlled to avoid local overheating.
   iii. The Contractor shall prevent contamination by water, diesel, release agents, aggregate fines and dust, and shall flush and clean lines and pumps before changing binder type.
d) Adhesion promoter (anti-strip) – Zycotherm
   i. Where Zycotherm is specified or proposed, it shall be dosed at 0.05% to 0.10% by mass of total binder, unless the Engineer accepts an alternative dosage based on mix testing.
   ii. The Contractor shall state the proposed Zycotherm dosage in the mix design submission and the approved JMF, and shall apply the dosage consistently during plant trials, the trial section, and production, unless the Engineer approves a change.

A9.1.5.4 Aggregates

Add the following after Table A9.1.5-1:

For the Stone mastic asphalt (SMA) wearing course for this contract, the project requirements are:

a) SMA aggregate structure
   i. All aggregate fractions in excess of 2.0 mm shall consist of individual nominal single size fractions. Run-of-crusher material shall not be used.
   ii. The Contractor shall identify the breakpoint sieve used for coarse aggregate structure checks and shall use it consistently in the mix design and quality control.

b) Additional coarse aggregate durability and shape requirements:
   i. Los Angeles abrasion loss: not more than 30 %.
   ii. Flat and elongated particles: not more than 20 % at a 3:1 ratio, and not more than 5 % at a 5:1 ratio.
   iii. Polishing resistance (airfield friction): The coarse aggregate shall comply with a minimum PSV (or approved equivalent polishing resistance indicator) stated in the Employer/Engineer airfield friction requirements / Contract Data. PSV testing shall be in accordance with EN 1097-8 (or approved equivalent), and compliance shall be assessed against the stated minimum value.
   iv. The Contractor shall manage stockpiles to prevent segregation and shall maintain a minimum three-day stockpile supply for each aggregate fraction, with quality testing as specified in COTO Chapter 9.
   v. Aggregate durability index (lithology-specific): The durability test(s) and acceptance limits shall be stated in the Contract Documentation for the proposed aggregate source, based on lithology and local performance history. Unless otherwise stated:
      - Basic/mafic igneous aggregates (for example dolerite): durability shall be demonstrated using SANS 3001-AG15 (ethylene glycol soak with 10% FACT ratio) or another Engineer-approved ethylene glycol durability indicator.

- Quartzitic aggregates: durability shall be demonstrated using magnesium sulphate soundness to EN 1367-2 / ASTM C88 / AASHTO T 104 (or approved equivalent), to the stated acceptance limit.

A9.1.5.5 Fillers

Add the following after Table A9.1.5-7:

For the Stone mastic asphalt (SMA) wearing course for this contract, the project requirements are:

c) Mineral filler control for SMA wearing course
   i. Mineral filler feed shall be continuous and uniform. The plant shall have a dedicated filler feeder capable of controlling filler rate within the approved JMF tolerances.
   ii. Baghouse fines shall not be treated as mineral filler unless the Engineer accepts the grading, moisture content and uniformity.

d) Active filler
   i. Hydrated lime shall be used as active filler in the SMA wearing course. The minimum active filler content shall be 1.0 % by mass of the total mixture.

A9.1.5.6 Fibres

Add the following after the first paragraph:

For the Stone mastic asphalt (SMA) wearing course for this contract, the project requirements are:

a) Fibre type and dosage
   i. The stabilising additive shall be cellulose fibre or mineral fibre. The Contractor shall state the fibre type, form (loose, pelletised) and dosage in the mix design submission.
   ii. The fibre dosage shall be sufficient to limit drain down to not more than 0.30 % (ASTM D6390). Unless otherwise approved, the target dosage shall be 0.5 % by mass of total mixture.

b) Plant addition and control
   i. Fibre shall be added through a calibrated fibre feeding system capable of uniform dosing at the approved rate.
   ii. The Contractor shall demonstrate, during the trial section, that fibre is uniformly dispersed and that there is no fibre loss to the baghouse or returned fines.

A9.1.7 EXECUTION OF THE WORKS

A9.1.7.5 Bond Coat

Add the following:

Notwithstanding the general exception in Clause A9.1.7.5 for stone mastic mixes, the cut face of longitudinal and transverse joints in the SMA wearing course shall be hand painted with bond coat material of the same type used for the substrate bond coat.

The bond coat shall fully coat the vertical face of the joint and shall be cured before placing adjacent SMA.

A9.1.7.6 Placing the asphalt

Add the following after the first paragraph:

For the SMA wearing course, the Contractor shall propose, in the compaction method statement, the full temperature control ranges for: mixing temperature, discharge temperature at plant, truck temperature on arrival, temperature in the truck immediately before discharge into the paver, mat temperature at start of rolling (compaction start temperature), and stop-rolling temperature.

The Engineer shall approve the compaction start temperature and the associated allowable temperature ranges based on the supplier recommendations and the accepted trial section results.

'Approved compaction start temperature' shall mean the mat temperature measured behind the screed at the point where the first roller begins rolling, as established and recorded during the accepted trial section.

The mixture temperature measured in the truck immediately before discharge into the paver shall be not less than the approved compaction start temperature plus 15 °C. Any load below this requirement shall not be placed and shall be dealt with in accordance with the Contractor's nonconforming materials procedure.

Haulage and thermal management (SMA wearing course)

The Contractor shall submit a haulage plan showing how the asphalt will be delivered and placed within the approved temperature ranges, including truck insulation/covering, dispatch intervals, maximum waiting time at site, and contingency measures for delays. Where temperature loss during haulage causes noncompliance, the Contractor shall revise logistics (including reducing haul time and/or distance, increasing truck availability, or adjusting paving sequence) to maintain compliance.

Truck beds shall be clean, and only approved release agents shall be used. Excess release agent shall be drained before loading to prevent surface defects in SMA.

Add the following to this clause:

"a) Asphalt Surfacing

All joints not paved with tandem pavers will be considered to be cold joints with reference to joint treatment preparation. All asphalt joints shall be cut back by an approved roller wheel or milling machine (minimum 70 mm in 2 x roller wheel cuts on surfacing layer) in a straight line to the satisfaction of the Engineer.

The lateral distance between joints of two (2) successive asphalt layers shall not be less than 200 mm.

Where the difference in level between the new work and the existing road surface exceeds 25 mm, joints shall be treated as follows:

Transverse steps at the end of a day's work on operational runways and taxiways shall be tapered off at a slope of 1 vertical to 20 horizontal (1:20) to tie in with the existing surface. The tapered section shall be removed before surfacing is recommenced and a joint formed in accordance with clause 4208 of the specification. Longitudinal joints exposed to traffic shall be provided with a taper of compacted asphalt material over the full length of the exposed joint. The width of the taper shall be at least 5 times the difference in level between the old and new work.

All costs involved in the provision and removal of these temporary ramps shall be deemed to have been included in the rates tendered for the relevant asphalt pay item.

b) Longitudinal Joints

Longitudinal joints shall be cut back as specified in a) above.

No saw-cutting will be allowed on newly placed asphalt. All wearing course transverse joints to be cut and treated similar to the specifications for longitudinal joints.

Whenever the paver stops for more than 5 minutes on thinner wearing course layers and/or the uncompacted material already laid cools down to below compaction temperature (116°C for wearing course), a joint shall be constructed as specified and all cooled uncompacted materials removed from the pavement."

A9.1.7.7 Compaction

Add the following before the first paragraph:

For the Stone mastic asphalt (SMA) wearing course for this contract, the project requirements are:

a) Roller type
   i. SMA wearing course shall be compacted with flat steel-wheeled rollers without vibration. Pneumatic tyre rollers shall not be used unless it can be proved it will ensure the required texture depth be obtained.
   ii. Rollers shall have a minimum operating mass of 9 tonnes.
b) Roller operation
   i. Rolling shall start immediately behind the paver. Rollers shall move at a uniform speed not exceeding 5 km/h, with the drive drum nearest the paver.
   ii. Rolling shall continue until roller marks are eliminated and the required density is achieved, but shall cease when the mat temperature is 116 °C or lower.
   iii. The Contractor shall keep roller drums moist with water and a small quantity of approved detergent. Diesel, paraffin or other petroleum-based agents are not permitted.
   iv. The Contractor shall avoid sharp turns, braking, or standing of rollers on the mat, to prevent surface tearing and mastic movement.
   v. Compaction method statement (including prior substantiation): Before SMA paving, the Contractor shall submit a compaction method statement that defines the proposed rolling pattern and how density and thickness will be achieved and controlled. The method statement shall include: roller type and mass, roller spacing behind the paver, rolling speeds, number of passes, pass sequence, rolling start and stop temperatures, paving speed, delivery temperature range, and temperature measurement locations. Where the Contractor relies on prior experience, the method statement shall include documented evidence from comparable works on similar materials and conditions (same or similar SMA type and NMPS, similar binder type, comparable plant, haul and paving conditions) showing achieved in-place density, achieved compacted thickness, and acceptable surface condition (no flushing/fat spots and acceptable texture). The Engineer may accept the substantiation to set the initial rolling pattern, subject to confirmation in the trial section requirements.
c) Density requirement
   i. The SMA wearing course shall be compacted to 94.0% to 97.0% of maximum theoretical density (Gmm), with a target operating range of 95.0% to 96.5% Gmm.
   ii. Density acceptance shall be based on cores, with Gmm taken from the approved mix design (and updated when the JMF changes). Nuclear density gauges shall be used for process control only, using the accepted correlation to cores.
   iii. Combined acceptance basis (not density only): Acceptance of SMA compaction shall be based on the combined result of:
      a) Density compliance based on cores, expressed as %Gmm, within the specified range; and
      b) Thickness compliance based on cores or other accepted thickness checks; and

c) Surface condition compliance, confirmed by inspection and agreed checks, including uniform surface texture, absence of flushing/fat spots, absence of tearing or drag marks, and sound joints.

Failure of any one of the above criteria shall constitute non-conforming work, regardless of achieved density.

iv. Corrective action and re-trial requirement: Where trial section density results fall outside 94.0% to 97.0% Gmm, or where flushing/fat spots or texture loss are observed, the trial section shall be treated as nonconforming and permanent works shall not commence. For the purpose of this clause, 'texture loss' shall mean failure to meet the specified macrotexture requirement measured in accordance with Clause A9.1.3.3(f).

a) Corrective action plan (trial stage): The Contractor shall submit and implement a corrective action plan that may include adjustment of the roller train (roller type/mass, number of passes, rolling pattern, roller spacing behind the paver, rolling start time), paving speed and/or delivery temperature within the approved mixing/placing limits.

b) Second trial section (mandatory confirmation): After implementing corrective actions, the Contractor shall construct a second trial section of the same minimum length and paving width as the first trial section, using the revised procedures. The second trial section shall demonstrate compliance with:

- density 94.0% to 97.0% Gmm (target operating range 95.0% to 96.5% Gmm); and
- no flushing/fat spots, no texture loss, and acceptable surface appearance.

Permanent works shall not commence until the second trial section is accepted by the Engineer.

c) Hold point

The second trial section is a hold point. Proceeding to permanent works without written Engineer acceptance is not permitted.

v. Trial section and production documentation (process record)

The Contractor shall provide, and the Engineer shall witness and record, the following for each trial section and for any revised trial section:

a) Rolling plan and as-built rolling record: roller make/model, operating mass, drum configuration, roller speeds, number of passes, pass sequence, rolling start distance behind the paver, stop-rolling temperature, and locations of any roller stops/turns.

b) Temperature mapping: truck discharge temperature, temperature at paver screed, and mat temperatures measured in front of and behind the paver and through the rolling window.

c) Infrared thermography: infrared images of the mat during paving and compaction to show temperature uniformity and cold spots (time-stamped and chainage).

d) Visual and video record: time-stamped photos and, where practicable, video of paving and rolling operations, joint construction, and any observed distress (checking, tearing, flushing, fat spots).

e) Test traceability: core locations, core results, nuclear gauge readings (for process control), and the accepted gauge-to-core correlation used.

f) As-built report: a trial section report that captures the final accepted paving speed, screed settings, levelling control method, rolling pattern, temperatures, density results, and any corrective actions taken.

A9.1.7.12 Asphalt temperature before opening to traffic

Add the following:

Where traffic accommodation is required, the Contractor shall propose and implement traffic control measures to prevent turning and braking on the SMA surface until the temperature requirement is met.

The surface shall not be opened to aircraft traffic until a wet runway friction survey confirms compliance with the acceptance requirements. The survey shall be carried out using continuous friction measuring equipment (CFME) with self-wetting, applying a uniform 1 mm water film, at 65 km/h, and results shall be assessed as average Mu for each 150 m segment. The CFME and its self-wetting system shall have a current calibration/verification certificate acceptable to the Engineer, and the survey shall be carried out by a competent operator or laboratory acceptable to the Engineer. The average Mu for each segment shall be not less than the "New Design or Construction/ Maintenance planning" friction level for the CFME as per the Table below. The friction report shall be submitted to the Engineer, and written acceptance is required before opening. If any segment does not comply, the work is nonconforming, shall be rectified, and shall be re-tested until compliance is achieved.

Table 3-1. Runway surface condition levels

Test equipment	Test tire		Test speed (km/h)	Test water depth (mm)	Design objective for new surface	Maintenance planning level	Minimum friction level
	Type	Pressure (kPa)					
(1)	(2)		(3)	(4)	(5)	(6)	(7)
Mu-meter Trailer	A	70	65	1.0	0.72	0.52	0.42
	A	70	95	1.0	0.66	0.38	0.26
Skiddometer Trailer	B	210	65	1.0	0.82	0.60	0.50
	B	210	95	1.0	0.74	0.47	0.34
Surface Friction Tester Vehicle	B	210	65	1.0	0.82	0.60	0.50
	B	210	95	1.0	0.74	0.47	0.34
Runway Friction Tester Vehicle	B	210	65	1.0	0.82	0.60	0.50
	B	210	95	1.0	0.74	0.54	0.41
TATRA Friction Tester Vehicle	B	210	65	1.0	0.76	0.57	0.48
	B	210	95	1.0	0.67	0.52	0.42
RUNAR Trailer	B	210	65	1.0	0.69	0.52	0.45
	B	210	95	1.0	0.63	0.42	0.32
GRIPTESTER Trailer	C	140	65	1.0	0.74	0.53	0.43
	C	140	95	1.0	0.64	0.36	0.24

A9.1.8 WORKMANSHIP

A9.1.8.1 Dimensional tolerances – new construction

(d) Cross-section

Replace the entire clause as follows:

"When tested with a 3 m straight edge laid in any direction on the runway (excluding areas on the crown of the runway), the surface shall not deviate from the bottom of the straight-edge by more than 3 mm for the runway.

A9.1.8.4 Surface regularity

a) Measured using inertial laser profilometers

*In the 6th paragraph add the following prior to "*The applicable Full Payment Bracket *…":*

"For the Asphalt Base the values in Payment Bracket 6 in Table A9.1.8-3 shall be applied as the payment adjustment factors for the Asphalt Base on the contract or section, and for the Asphalt Surfacing".

In the 6th paragraph add the following after "…assessment of the base as per Clause A5.3.8.5c) of Chapter 5 for granular bases":

", and this clause A9.1.8.4a) for Asphalt bases."

In the 7th paragraph, delete: "under 1".

Add the following after the 8th paragraph:

"Where the asphalt surfacing is placed on a surface, other than a granular or asphalt base, constructed by the Contractor through mill and replace or patching, the surface regularity of the replaced or patched

surface shall be measured before the surfacing is placed. Should the IRI values per 100m section so determined be better than the IRI values of the original surfacing for the particular 100m section, the measured values shall be used for the $IRI_{b\ Ave}$ in the above calculation. Should the IRI values per 100m section so determined be worse than the IRI values of the original surfacing for the particular 100m section, the IRI values of the original surfacing shall be used for the $IRI_{b\ Ave}$ in the above calculation."

In the 9th paragraph, delete: "surfacing".

*For Table A9.1.8-3, delete "*surfacings*" in the heading and add the following additional Payment Bracket to Table A9.1.8-3*

Table A9.1.8-3: PAYMENT BRACKET

"Target $IRI_{100m\ Ave}$ (m/km)	**Payment Bracket 9**
< 0.80	1.050
0.81 to 0.90	1.050
0.91 to 1.00	1.050
1.01 to 1.10	1.050
1.11 to 1.20	1.050
1.21 to 1.30	1.050
1.31 to 1.40	1.050
1.41 to 1.50	1.050
1.51 to 1.60	1.050
1.61 to 1.70	1.025
1.71 to 1.80	1.010
1.81 to 1.90	1.000
1.91 to 2.00	0.990
2.01 to 2.10	0,975
2.11 to 2.20	0,955
2.21 to 2.30	0,930
2.31 to 2.40	0,900
2.41 to 2.50	0.865
>2.51	Reject"

A9.1.8.7 Voids

Add the following to this clause:

(a) Air-void tolerance

Replace the content with the following:

"The actual air voids may not deviate by more than 1.5 percentage point from the design voids @ N_{design}, based on a gyratory compaction of the approved working mix.

The actual air voids may not deviate by more than 2 percentage point from the air voids in the approved working SMA, based on a Marshall compaction of the approved working mix."

Basis from NAPA QIP 122

This amendment sets an acceptance tolerance around the SMA design intent, where the mixture is designed at about 4% air voids (with asphalt content selected to achieve that level) , and where production/QA compacted specimens are expected to fall within a specified range (typically 3–4%) to avoid permeability and durability loss (noting SMA becomes permeable at about 6–7% air voids) .

A9.1.8.8 Sampling

(a) Coring of completed layers

Add the following at the end of the first paragraph:

"No laying of asphalt surfacing shall be permitted unless a suitable core cutting machine is available on site at all times when asphalt paving is taking place. Cores shall be taken as directed by the Engineer. Cores may only be drilled when the layer temperature is less than 20°C. Core holes must immediately after coring be filled with hot asphalt and compacted. Cores shall be taken within 48 hours of paving. The density test results on the cores will be submitted to the Engineer 24 hours after coring."

Add the following new sub-clauses:

(d) Quality Control

The Contractor will be required to submit his detailed Quality Assurance Plan (system) to the Engineer for approval. Once approved, the Contractor shall not deviate from the system.

(e) Riding quality

"For the SMA overlaid areas, the surface regularity, in addition to the specified requirements, shall be determined with a high speed profilometer (HSP), capable of producing a class 1 vertical measurement and class 3 longitudinal sampling distance as defined in ASTM standard E950-94, with a valid validation certificate. Record the longitudinal profile in both wheel tracks, 1,7 m apart for each paved lane. Then, from the data, determine the average IRI for the left and right wheel track for each 100 m section for each lane paved in one width (the values indicated in Table A9.1.8.8/1 may be relaxed by the Engineer on the portion of the width that does not get an infill. This will be determined and communicated once the existing IRI's have been determined). The first and last 50m of the runway will not be assessed for riding quality.

The IRI shall be judges in terms of the payment adjustment factors in Table A9.1.8.8/1.

TABLE A9.1.8.8/1: RIDING QUALITY FOR SMA OVERLAY PAYMENT ADJUSTMENT FACTOR

Riding quality	**Payment adjustment factor**
100 m IRI values (mm / m)	**UTFC and SMA overlay on existing surface**
< 1,20	1,0
1,21 – 1,30	1,0
1,31 – 1,40	1,0
1,41 – 1,50	0,98

1,51 – 1,60	0,97
1,61 – 1,70	0,96
1,71 – 1,80	0,94
1,81 – 1,90	0,92
1,91 – 2,0	0,90
> 2,0	Not acceptable

Sections that are found to be unacceptable in terms of regularity shall either be replaced, or remedial measures implemented that will provide the required riding quality. A method statement describing these measures shall be approved by the employer before implementation. Skimming of the areas with a milling machine shall not be allowed. Corrective work shall be done at the contractor's expense. After completion of the corrective work the specific 100 m section shall be re-evaluated as described above.

Any adjustment to the payment of asphalt surfacing shall be done by multiplying the payment adjustment factor derived as above with the full payment of the relevant asphalt pay item plus tack coat and other payable incidentals. The payment adjustment factor shall apply to the full layer width paved in one operation for that specific 100 m section.

Riding quality tests using the HSP shall be paid for under pay item **C20.1.6**.

Any acceptance of asphalt quality control will not be deemed to include for this clause until such testing has been complete and finalised with the Engineer. Acceptance at partial payment, based on obtained riding quality between 1,4 and 2,0, is at the discretion of the Engineer (based on adherence to all applicable COTO workmanship specifications). In areas where the Engineer can certify adherence to the criteria, in the absence of available IRI test results, he may do so with permission of both the Employer and Contractor.

The rolling straight edge test in the Standard Specifications will not be applicable except on the transverse construction / stop joints of all paved sections. The maximum irregularity measure with the wheels of the standard apparatus removed (only outer wheels at 3m spacing in place) shall be + or - 3mm. Joints that do not satisfy these criteria shall be milled and reconstructed over a minimum "10m in length " section."

The Contractor shall arrange for the IRI testing of all sections by a Laboratory approved by the Engineer, before the end of the Contract or when instructed within 21 days of such instruction. Costs for such testing of all relevant sections shall be deemed to be included in the rates of these wearing course layers; additional IRI testing as instructed by the Engineer shall be paid under **C20.1.6**. unless otherwise indicated by the Engineer.

The contractor is to supply surveyed levels of each layer (including the milled interface and the original surface) to the engineer at a frequency of at least five positions along the width of the paved layer and at 20m interval. These co-ordinated positions shall then be used for all subsequent surveyed layers. ”

(f) Special tests

(i) Recovery of binder for further testing

Extraction of bitumen and its recovery from samples taken from the asphalt layers shall be carried out in accordance with ASTM D1856/79 (Abson).

(ii) n-Heptane-xylene Equivalent (Spot Test) (AASHTO – T102)

If the Engineer considers that bitumen or asphalt has been overheated, he may order that the bitumen or the bitumen recovered from the asphalt be subjected to the spot test.

Recovery of binder for use in the spot test shall be carried out as described in (d) (i) above.

Any sample showing an n-Heptane-xylene equivalent in excess of 36 or if the bitumen contains a proportion of bitumen prepared from cracked stock, in excess of the manufacturers test result on the new stock, shall be considered to have been overheated and shall be rejected.

(iii) The following additional test shall be carried out on asphalt samples taken from the paver hopper:

- Penetration of recovered binder @ 25°C (Method ASTM D5)

Should the penetration of the recovered binder be less than 24 at 25°C, the asphalt layer shall be deemed to be unsatisfactory and shall be condemned by the Engineer. The Engineer on site shall decide the frequency of testing.

(g) As-Built

The Contractor shall keep accurate records and submit the following information to the Engineer on a daily basis:

I. Where every truckload of asphalt is laid (load, position, lane, time and date).

II. The truck number from which control samples have been taken. All samples taken from trucks shall be numbered.

III. The temperature of the asphalt in the truck both at the mixing plant and at the paving equipment.

IV. Process control results

These shall be summarised on a spreadsheet/database and mapped for as-built purposes and supplied to the engineer on a daily basis."

A9.1.8.5 Grading

Amend the permissible deviation from target grading in Table A9.1.8-4, on the following sieve sizes:

Size of aggregate passing sieve size (mm)	Permissible deviation from target grading (%)
14	±4
10	±4
7.1	±4
5	±3
2	±3
0,600	±3

PART C: MEASUREMENT AND PAYMENT

(iii) Items that will not be measured separately

Delete activity 6, and replace with the following:

"6.No separate payment will be made for transporting materials from commercial sources irrespective of the haul distance and no separate payment will be made for transporting asphalt from any source, irrespective of the haul distance."

COTO CHAPTER 11: ANCILLARY ROAD WORKS

SECTION 11.7: ROAD MARKINGS AND ROAD STUDS

PART A: SPECIFICATIONS

A11.7.3 GENERAL

Add the following to A11.7.3 GENERAL:

"Where the runway or taxiway is to be re-opened to traffic after shifts, the Contractor will be required to apply all necessary paint markings at completion of each such shift within a designated area. The paint shall be non-reflectorised and applied strictly in accordance with the manufacturer's instructions. The paint shall be normal road marking paint complying with SABS 731. Solvent-based paints will be used for temporary paint markings and water-based paint for all permanent paint markings. At the start of the project, the Contractor will supply samples of the paint he intends to use and apply trial sections to the satisfaction of the Engineer which will also include environmental risk mitigation measures to be implemented and maintained as well as waste management."

A11.7.5 MATERIALS

A11.7.5.2 Materials

a) Marking materials

(iii) Thermoplastic road marking material

- *In the 4th paragraph, delete "*mcd/m^2.lux*"and replace with "*mcd/m^2/lux"

SECTION 11.8: LANDSCAPING AND PLANTING PLANTS

PART A: SPECIFICATIONS

A11.8.7 EXECUTION OF THE WORKS

A11.8.5 MATERIALS

A11.8.5.2 Materials

d) Grass seeds

Add the following grass seed mixture:

Latin Name	English Name	kg/ha
Eragrostis tef	Teff	2,0
Digitaria eriantha	Finger grass	5,0
Chloris guyana	Rhodes grass	4,0
Cenchrus ciliaris	Blue Buffalo grass	4,0
Cynodon dactylon	Couch grass	7,0
Aristada congesta	Three lawn grass	2,5
Melinis repens	Natal red top	2,5
Panicum coloratum	White Buffalo grass	2,5
Andropogum eucomus	Snowflake grass	2,5
Imperata cylindrica	Cottonwool grass	2,5
	Others to be added	0,5
Total		**35,0**

A11.8.7.1 Landscaping the areas

(a) Shaping

Replace the term "road reserve*" with* "runway end safety areas and runway strips"

A11.8.7.3 Grassing

(c) Hydroseeding

Add the following:

During seeding, the seed mixture shall be regularly mixed by hand in order to prevent the separation of smaller and larger seeds in the mixture. After seeding, the soil surface shall be lightly raked parallel to the contours in order to cover the seed. During raking, care shall be taken to prevent the redistribution or removal of seed from any area. Seeding to comply with supplier's guidelines and all additional costs

are deemed to be included in tendered rates. This includes shade netting at areas close to runway thresholds."

A11.8.7.4 Maintaining the grass cover.

(a) Watering, weeding, mowing and replanting.

Add the following to the second paragraph:

"The Contractor shall remain off newly grassed areas or areas that have been prepared for grassing. Any damages caused by the Contractor to newly grassed areas or areas that have been prepared for grassing shall be repaired to the satisfaction of the Engineer, at the Contractor's own expense."

(c) Maintenance period

Add the following before the first paragraph:

"In this subclause all reference to the maintenance period in respect of grass shall mutatis mutandis also apply to the maintenance of the shade netting required to protect the grass sods or newly planted hydroseed against the damage caused by jet blast. The maintenance period is also one (1) year and comprises the repair and securing of the netting as and when required by the Engineer. The Contractor may be required to remove the netting before the maintenance period has expired."

C11.9

PART C: MEASUREMENT AND PAYMENT

Add the following payment subitem:

Item	Description	Unit
C11.9.1.3	Finishing and cleaning of works: Runway at the end of each shift	Month

FOD is a danger to the aircraft's engines; as a result, a sweeper must be used to clean the surfaces of the runway, taxiways, and all work sites during the duration of the project. This will be a daily or per-shift exercise. This item also includes the finishing of the area as well.

COTO CHAPTER 20: QUALITY ASSURANCE

SECTION 20.1: TESTING MATERIALS AND JUDGEMENT OF WORKMANSHIP

PART A: SPECIFICATION

Replace all references to "TMH5" *in this section with:* "SABITA Manual 37 / TMH5 (latest edition)."

A20.1.2 DEFINITIONS

Independent site laboratory

*In the definition of "*Independent site laboratory*", add the following:*

*"*Independent Site laboratory in COTO is equivalent to the combined laboratory in the Employer documentation.*"*

A20.1.3 TESTING METHODS

A20.1.3.2 Standard Methods

Add the following to the last paragraph:

"*Replace all references to* "TMH5" *in this section with:* "SABITA Manual 37 / TMH5 (latest edition)".

A20.1.4 PUBLISHED TEST METHODS

A20.1.4.8 Testing of asphalt

Add the following new paragraph:

"Sabita Manual 39: Laboratory Testing Protocols for Binders and Asphalt, shall be implemented together with the asphalt tests listed."

*Delete reference to: "*Sabita Manual 35 for Design and Use of Asphalt in Road Pavements: Determining the Richness Modulus of EME asphalt mixes*."*

*and replace with "*Sabita Manual 33 for Design Procedure for High Modulus Asphalt (EME): Determining the Richness Modulus of EME asphalt mixes."

A20.1.7 ACCEPTANCE CONTROL BY STATISTICAL JUDGEMENT PRINCIPLES

A20.1.7.5 Assessment Methods

b) Judgement plans

Add the following new sub-clause (iii) and renumber the existing sub-clause (iii) to (iv) and (iv) to (v):

"*(iii) Judgement Plan C*

Judgement Plan C is for judging measurements of the levels and thicknesses of pavement layers. In accordance with this plan, the compliance of the individual results only with the specified requirements is determined and the variability of test results is not computed."

Add the following new sub-clause (e):

"(e) Application of Judgement Plan C

Surface levels and layer thicknesses shall be judged in accordance with the following procedure:

i) *Taking the levels*

Level measurements shall be taken in a random pattern, before and after a layer has been constructed, and levels shall be taken at exactly the same point before and after construction. Layer thicknesses will then be determinable as the difference between the pre- and post-construction levels but may be supplemented by determinations made by means of holes made in the layer.

The number of measurements of layer thicknesses shall be at least 30 (thirty), and that of surface levels at least 50 (fifty). Larger sample sizes will give more reliable results.

In the case of asphalt layers, the engineer may require that layer thicknesses be determined only by means of measurements taken on drilled cores, in which case the minimum number of cores shall be 20 (twenty) per lot and not 30 (thirty).

For rehabilitation or repair work the number of measurements shall be as specified in the Contract documentation or as directed by the engineer.

ii) *Calculating the deviations*

Compute the difference between the specified level or thickness and the actual level or thickness. Compute the mean thickness of the layer.

iii) Identifying outliers

Check this work by remeasuring any results which may possibly be defective.

iv) *Assessing the results*

The following criteria will apply when results are assessed:

1. Surface levels

   The lot will comply with the requirements specified for surface levels if at least 90% of all surface levels are within the H_{90} tolerance specified in each case, before any level corrections are made.

   Individual spots, where the surface level deviates by more than the H_{max} tolerance, specified in each case, shall be repaired to bring them to within the H_{90} tolerance.

2. Layer thickness

   Individual spots, where the actual thickness is less than the specified thickness minus the D_{max} tolerance specified in each case, shall be locally repaired to bring them within the D_{90} tolerance."

PART C: MEASUREMENT AND PAYMENT

Item **Unit**

Amend the following pay item to read as follows:

C20.1.5 Financial contribution by Contractor for an independent site laboratory (to be a negative rate)
..... Month

"The contractor shall pay the appointed site laboratory monthly for the amount as certified by the Engineer.

The independent site lab shall be responsible for all acceptance control testing and additional tests as requested by the Engineer.

Add the following new pay item:

"C20.1.6 Contribution of the Employer towards the independent site laboratory

C20.1.6.1 (a) Direct payment by contractor ..... prime cost (PC) sum
i) Handling cost and profit in respect of item C20.1.6.1 ..... percentage (%)

The contractor shall pay the appointed site laboratory monthly for the amount as certified by the Engineer.
The charge or mark-up tendered or allowed for is a percentage of the amount actually paid under the prime cost item. The percentage shall cover all the Contractors' sourcing, handling, profit, and payment of the service provider in providing the services. The Contractor shall forfeit his mark-up when the service provider is not paid in time."

Item 20.1.5 and 20.1.6 goes together, both parties contribute 50% towards the payment of the independent lab. With the Contractors 50% coming from Item C20.1.5 and the Employers amount coming from item C20.1.6.1 a).

SECTION B: SPECIFICATION DATA

Notes to tenderer:

1. **In certain clauses, the Standard Specifications allow a choice to be specified in the Contract Documentation or Project Specifications between alternative materials or methods of construction and for additional requirements to be specified to suit a particular contract. Details of such alternatives or additional requirements applicable to this contract are contained in this Section B: Specification Data.**
2. **The number of each clause and each payment item in this part of the project specifications follows the numbering format of the COTO standard specifications. Where, however, a clause has been amended under Section A2, the clause number is prefixed with a "P" in this Section.**

- **COTO CHAPTER 1: GENERAL**

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
1	**C1.1**	**C1.1**	**General Preamble**	Pay items that require additional wording or item lists (text in brackets in the COTO template) are completed in the Pricing Schedule (Excel BOQ). No additional descriptive text for such items is repeated in Part B of the specifications.
	A1.2	**A1.2.3.3**	**Environmental management**	The Environmental Authorisation, Environmental Management Programme (EMP) and any water-use licences applicable to the project are contained in Section C: Environmental Specifications and Part C4: Project Information. Pay item C1.2.1.1 covers the Contractor's obligations for monitoring compliance with the environmental specifications and for reporting. The Contractor shall appoint a competent environmental officer (full-time while work is in progress) and shall implement a written waste-management plan for all works within the airport boundary.
	A1.2	**A1.2.3.4(c)**	**Extension of time for delays caused by rainfall – Method 3**	Method 3 (Critical path method without consequential delays) shall apply. For this contract the value of **N = 35** working days based on historic rainfall records for Chief Dawid Stuurman International Airport included in Part C4: Project Information. The Contractor shall show N as terminal float on the approved Scheme 2 programme.
	A1.2	**A1.2.3.5**	**Handing-over of the Site of the Works**	The conditions for handing-over of the Site of the Works are as follows: • Sequence: Handover and completion shall follow the staging shown on the drawings in Part C3, in the order (1)

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Runway 08/26 works, (2) Taxiway Alpha works, (3) GA apron and remaining airside pavements. • Temporary deviations: The total combined length of temporary deviations for public and airport road traffic shall not exceed 3,0 km, with any single deviation not longer than 1,5 km. • Half or partial width sections: A maximum of two half-width or partial-width sections for road traffic may be in operation at any time. • Unrestricted sections: A minimum of 1,0 km of full-width unrestricted roadway shall be kept open between half-width sections. • Other: Access to airside and landside areas shall comply with ACSA operational procedures.
	A1.2	**A1.2.3.9**	**Monthly reports**	In addition to the requirements of the Conditions of Contract, monthly progress reports shall include: • the updated Scheme 2 programme with a written progress narrative • labour and SMME statistics • environmental and health-and-safety statistics • status of wayleaves and permits • register of runway and taxiway closures and restrictions • aerial progress footage – at least one set of geo-referenced drone photographs and a short video every month, supplied in editable and .pdf/.mp4 formats.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	A1.2	**A1.2.3.10**	**Notices, signs and advertisements**	Details of the contract sign board are shown on Drawing G-001 “Typical Contract Sign Board” in Part C3. No other advertising boards are permitted within the airport boundary except one identification board at the Contractor’s site camp.
	A1.2	**A1.2.3.12**	**Ownership of assets and disposal of non-usable assets**	The Employer remains owner of all assets within the road and airside reserve. Non-usable assets to be disposed of by the Contractor are scheduled in the Disposal Plan in Part C4 and in the Pricing Schedule. The Contractor shall dispose of each listed asset in accordance with the stated disposal requirement, either to a designated ACSA stockpile or reuse site or to an approved spoil site at the Contractor’s cost, as specified. Where assets are to be stockpiled for later re-use by ACSA, the designated locations are identified in Part C4.
	A1.2	**A1.2.3.13**	**Prevention of damage to nearby properties and services**	Structures to be protected from vibration and construction activities include as a minimum: the terminal building, ATC tower, NAVAID equipment buildings, fuel-farm facilities, existing culverts and services chambers within 100 m of the works, and any other structures listed in Part C4. The Contractor shall carry out pre-construction condition surveys and vibration monitoring for these structures as specified in Part C4 and the Project Specifications.
	A1.2	**PA1.2.3.15**	**Routine maintenance**	For the duration of the Contract the Contractor shall be responsible for routine maintenance of all existing surfaced pavements, drainage and road furniture within the limits of construction and along

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				any designated detour routes used by site traffic, as part of his general obligations under C1.3.1. Routine maintenance includes patching, pothole repair, debris and FOD removal, drain cleaning and maintaining safe riding quality on temporary gravel deviations. Backfilling for patch repairs shall comply with Chapter 8 pretreatment requirements, and riding quality of gravel deviations shall comply with the tolerances stated in Chapter 5 and the Contract Data.
	A1.2	**A1.2.3.18**	**Stakeholder liaison**	Stakeholder-liaison requirements C3.7.5. Key stakeholders include ACSA Operations, ATNS/air traffic services, airlines, ground-handling operators, fuel suppliers, emergency services, and affected local communities. Outcomes of stakeholder engagement, including agreed runway closure windows and noise-sensitive hours, are summarised in Part C4 and shall be incorporated into the Contractor's programme and method statements.
	A1.2	**A1.2.3.21**	**Water**	Provision of construction water remains the Contractor's responsibility. Potable and non-potable water may be drawn from airport water connections identified in Part C4, subject to municipal restrictions and ACSA approvals. Any constraints on abstraction volumes and times are summarised in Part C4 and shall be allowed for in the Contractor's programme and plant selection.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	A1.2	**A1.2.3.22**	**Wayleaves, agreements and permits**	The Contractor shall obtain wayleaves and permits where required from: Nelson Mandela Bay Municipality (water, sewer, stormwater, roads), the relevant electrical utility, telecoms providers, the fuel-farm operator, ATNS/CAA for work near NAVAIDs, and any other service owners identified in Part C4. Where no wayleaves are required, this shall be confirmed in writing at the pre-construction meeting.
	A1.2	**PA1.2.7.1(a)**	**Programme of work – general**	A Scheme 2 programme shall be used for this contract. The baseline and all updates shall be prepared in Primavera P6 or MS Project and submitted in both native format and .pdf. The programme shall show critical path, float, interfaces with runway and taxiway possession times, and the N-day rainfall float as specified in A1.2.3.4(c).
	A1.2	**PA1.2.7.1(b)**	**Programme of work – Scheme 2 detail**	The programme shall be compatible with the planning software stated above and shall include, as additional schedules: a procurement and delivery schedule for key materials; a traffic-accommodation and staging schedule showing runway and taxiway closures; a testing and quality-control schedule; and an environmental and safety milestone schedule.
	A1.2	**A1.2.7.4**	**Work on, over, under or adjacent to utilities**	Work on, over, under or adjacent to utilities shall comply with the official specifications and safety rules of each service owner. Written approval from the relevant owner shall be obtained before working within the stated

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				protection zones, and evidence of such approvals shall be kept in the site safety file.
	A1.3	**A1.3.3.1**	**Construction camps**	The primary construction camp, site offices and laboratory shall be located within the airside service area near the mobilisation site as indicated in Part C4 and the contractor to provide site plan. No other construction camps may be established without written approval of the Engineer and ACSA.
	A1.4	**A1.4.3**	**Facilities for the Engineer – general**	The Contractor shall provide the site-facility layouts for offices, the laboratory, stores, parking, and covered working areas, based on the Engineer's Facilities Layout drawings. The Engineer will not provide own buildings; all facilities listed under BOQ items C1.4.1 to C1.4.5 shall be provided, maintained and serviced by the Contractor.
	A1.4	**A1.4.7.1(b)**	**Offices – fittings, furniture and equipment**	Offices shall be fitted and furnished to match or exceed the items scheduled under C1.4.2 and C1.4.3, including shelving, blinds, noticeboards, desks, tables, cupboards, power points, lighting, air-conditioning, refrigerator, kettle, drawing rack, whiteboard, safety jackets and radios. Any deviations from the standard COTO list are reflected in the BOQ descriptions and shall be provided accordingly.
	A1.4	**A1.4.7.1(c)**	**Laboratories**	A combined asphalt laboratory shall be provided at the Contractor's site facilities area. The Contractor shall design the laboratory layout and shall prepare drawings showing at least the floor area, equipment layout, utility connections, access routes, and storage areas. The Contractor shall submit these drawings to the Engineer for approval

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				before any construction or installation of the laboratory takes place. The laboratory shall have sufficient floor area and equipment capacity to carry out all routine control testing required for this Contract, as specified in the Project Specifications and in Part C4. The Contractor shall, as a minimum, provide the laboratory type and equipment listed in Part C4. No off-site commercial laboratory may be used for routine control testing without the prior written approval of the Engineer.
	A1.4	**A1.4.7.1(f)**	**Ablution unit**	Separate ablution facilities for male and female staff shall be provided. A dedicated shower and change room for laboratory and office staff is required as part of the ablution block measured under item C1.4.1.7.
	A1.4	**A1.4.7.2(a)**	**Prefabricated houses**	No prefabricated houses for the Engineer are scheduled for this contract and this clause is not applicable.
	A1.4	**A1.4.7.3(b)**	**Services – water, electricity and gas**	The Contractor shall provide and maintain all service connections to the Engineer's offices and laboratory. A standby diesel generator with sufficient capacity to operate offices and laboratory shall be provided to cover power outages and planned utility shutdowns. Fuel, operation and maintenance are included in the services at offices and laboratories measured under items C1.4.5.1 and C1.4.5.2.
	A1.4	**A1.4.7.5**	**Office staff**	The Contractor shall provide, at his cost, at least one full-time office secretary and document controller dedicated to the Engineer's office for the

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				duration of the Contract, responsible for typing, filing, document control and managing the drawing register.
	A1.5	**A1.5.3.2**	**General requirements – accommodation of traffic**	Traffic-accommodation measures for public and airport road traffic, including all temporary deviations.
	A1.5	**A1.5.3.3**	**Lane width**	All traffic lanes on temporary deviations shall have a minimum width of 3,5 m. No lane widths smaller than 3,5 m are permitted. Where this cannot be achieved, the layout shall be redesigned and resubmitted to the Engineer for approval.
	A1.5	**A1.5.3.14**	**Vertical clearance**	No public road overbridges fall within the limits of construction. Vertical-clearance restrictions for road structures are therefore not applicable and this clause does not affect the works.
	A1.5	**A1.5.6.1(a)**	**Barriers – containment level**	Terminal sections shall match the barrier containment level. Aircraft barriers, moveable barricades and runway closure markers are measured separately under Chapter 11 and under the “Other” items scheduled in C1.5.7 and shall comply with ACSA airside standards.
	A1.5	**A1.5.6.2(d)**	**Sign-mounted flashing lights**	Flashing amber lights mounted on warning signs for temporary deviations shall operate continuously during hours of darkness and during periods of poor visibility such as fog or heavy rain. Day-time operation in clear conditions is not required unless ordered by the Engineer for specific high-risk locations.
	A1.5	**A1.5.7.3**	**Accommodation of traffic where the road is**	Each one-way half-width or partial-width section for public road traffic shall not exceed 1,0 km in length.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			constructed in half or partial widths	No more than two such sections may be in operation at any time. Additional periods during which no STOP/GO sections may operate will be listed in the Contract Data and shall be strictly observed.
	A1.5	**A1.5.7.6**	**Maintenance of existing roads used as detours**	All existing public or airport roads used as detours by the public or by the Contractor's vehicles to bypass the site shall be maintained by the Contractor for the duration of their use. Maintenance includes pothole repair, grading of gravel sections, drainage maintenance and keeping the surface free of loose material.
	A1.5	**A1.5.7.10(d)**	**Earthworks and pavement layers for temporary deviations**	Temporary deviations shall be constructed with a minimum pavement structure equivalent to: 150 mm G7 or better selected layer; 150 mm G5 or G6 base, or as detailed on the drawings; surfaced with either 30–40 mm asphalt or a double seal, as indicated on the traffic-deviation drawings. Any alternative structure proposed by the Contractor shall achieve equal or better structural capacity and requires prior approval from the Engineer.
	A1.5	**A1.5.7.10(e)**	**Surfacing of temporary deviations**	Surfacing of temporary deviations shall match the surfacing type and skid-resistance requirements of the adjacent existing road or shall be as shown on the traffic-management drawings. Where asphalt surfacing is used, the nominal aggregate size and binder type shall comply with the requirements of COTO Chapter 9 and the Project Specifications. Where bituminous surface seals are used, the binder and aggregate shall comply with the

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				requirements of COTO Chapter 10 and the Project Specifications.
	A1.6	**A1.6.7.2**	**Clearing – forest or plantation areas**	The project does not traverse forests or plantations and there are no areas where the number of large trees renders individual measurement impracticable. Removal of trees will therefore be measured individually under the relevant clearing items; the bulk tree-removal item of the standard specification is not used on this project.
	A1.7	**A1.7.7**	**Execution of loading and hauling**	In addition to clause A1.7.7, the Contractor shall provide the Engineer with certified carrying capacity documentation for each vehicle used to transport construction materials before hauling commences. No vehicle may be loaded above its certified legal capacity.

- **COTO CHAPTER 3: DRAINAGE**

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
3			**DRAINAGE**	
	A3.1		**DRAINS**	
		A3.1.4	**DESIGN BY CONTRACTOR / PERFORMANCE**	Not Applicable
		A3.1.5	**MATERIALS**	
			A3.1.5.2 Subsoil Drainage Materials a) Pipes	Pipes for subsoil drains shall be U-PVC pipes and fittings, normal duty, complete with couplings (150mm perforated and unperforated)
		A3.1.7	**EXECUTION OF THE WORKS**	
			A3.1.7.4 Subsoil drainage a) Construction of subsoil drainage systems	
			(ii) With polymer film lining to trenches for subsoil drainage systems	Refer to Drawings ROMH188-07-R9-012
			(v) With alternative drainage systems	Not Applicable
			A3.1.7.5 Manholes, outlet structures and cleaning eyes	Refer to Drawings ROMH188-07-R9-001, 003, 004, 005, & 010 & 013
	B3.1		**DRAINS**	
		B3.1.6	**CONSTRUCTION EQUIPMENT**	Construction equipment to be proposed by the contractor
	A3.2		**CULVERTS**	
		A3.2.3	**GENERAL**	
			A3.2.3.1 Types of culverts	Not Applicable
		A3.2.4	**DESIGN BY CONTRACTOR /**	Not Applicable

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			PERFORMANCE BASED SYSTEMS	
		A3.2.5	**MATERIALS**	
			A3.2.5.2 Culvert materials	
			h) Protective coating for metal culverts	Not required
			j) Alternative culvert materials	Not required
		A3.2.7	**EXECUTION OF THE WORKS**	
			A3.2.7.4 Unsuitable founding conditions	Refer to Drawings ROMH188-07-R9-002
			A3.2.7.14 Sleeving or lining of existing culverts	Not Applicable
	D3.2		**CULVERTS**	Not required
	A3.3		**CONCRETE KERBING AND CHANNELING, ASPHALT BERMS, CHUTES, DOWNPIPES, AS WELL AS CONCRETE, STONE PITCHED AND GABION LININGS FOR OPEN DRAINS**	
		A3.3.5	**MATERIALS**	
			A3.3.5.2 Drainage structure materials	
			n) Alternative materials	Where indicated on the drawings or approved by the Engineer, open drains may be lined using an Armoflex 180 block system or similar approved articulating concrete block lining.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				The blocks shall be factory-produced, machine-compressed concrete units with vertical holes and two horizontal cable ducts. Concrete used shall have a 28-day compressive strength not less than 30 MPa. Each block shall have nominal dimensions of 340 mm × 300 mm × 110 mm, a mass not less than 17.1 kg, and form part of an interlocking matrix with a unit mass of approximately 180 kg/m².
		PA3.3.7	**EXECUTION OF THE WORKS**	
			PA3.3.7.1 Drainage structures	
			a) Prefabricated concrete kerbing and channelling	Refer to Drawings ROMH188-07-R9-003
			i) Stone pitched open drains	Not Applicable

- **COTO CHAPTER 4: EARTHWORKS AND PAVEMENT LAYERS: MATERIALS**

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
4			**Scope**	This Chapter covers cut materials and existing road materials that appear in the Bill of Quantities under C4.2 and C4.3. No borrow materials, commercial borrow sources or alternative materials are measured under Chapter 4 for this Contract.
	A4.2	**PA4.2.3**	**General – Contractor prepared plans for cuttings**	The Contractor shall prepare Method and Use plans for all substantial cuttings and designated excavations linked to items C4.2.8 and C4.2.12. Plans shall describe: • excavation sequence and traffic accommodation • material classification and expected hardness • temporary support and slope protection measures • stockpile and spoil areas quality control testing and inspection. Plans shall be approved before excavation starts.
	A4.2	**A4.2.7.1**	**Excavation operations – Control at cuttings and box cuts**	For C4.2.8 and C4.2.12 works the Contractor shall: • appoint a responsible person as materials and excavation controller • identify and record excavation classes as soft, intermediate or hard in line with COTO

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				• control excavation to achieve required cross-section and side slopes • coordinate with the Engineer before discarding any material that might be suitable for re-use.
	A4.2	**A4.2.7.1(b)**	**Classes of excavation**	Excavation for item C4.2.8 shall be classified as soft, intermediate or hard excavation. The reference construction equipment shall be the default equipment defined in COTO Chapter 4. Disputes on excavation class shall be resolved using the COTO procedures.
	A4.2	**A4.2.7.1(h)**	**Excavation of material in cuttings**	Cuttings linked to C4.2.8 excavation to spoil shall: • follow the dimensions and side slopes shown on the drawings • include any benching required for deep or rock cuttings • include temporary and permanent slope protection measures where detailed. Where instability occurs the Contractor shall notify the Engineer and implement agreed stabilisation.
	A4.2	**A4.2.7.1(n)**	**Finishing of side slopes**	Finishing works under C4.2.12.1(a) shall include: • trimming slopes to design line, level and gradient • removing loose or unstable material

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				• forming berms, benches and drains where shown • applying topsoil and vegetation or other slope protection where required. Unstable slopes shall be stabilised using measures agreed with the Engineer.
	C4.2	**C4.2.8**	**Measurement and payment – Excavation to spoil**	Items C4.2.8.1 and C4.2.8.4 cover excavation of in situ material in cuttings or other areas where material is carted to spoil sites designated by the Employer. Rates shall include excavation, loading, haul, tipping, trimming to lines and levels and all temporary support and safety measures.
	C4.2	**C4.2.12**	**Measurement and payment – Finishing side slopes**	Item C4.2.12.1(a) covers finishing off cut slopes in all materials. Rates shall include trimming, removal of loose material, shaping berms and drains and disposal of unsuitable material to spoil.
	A4.3	**A4.3.3.1**	**Existing road materials – information**	Information on existing pavement layers, including trial pits, layer thicknesses and test results, is provided in Volume 6. The Contractor shall use and verify this information when planning milling and excavation operations.
	A4.3	**A4.3.5.2**	**Reclaimed asphalt material**	Reclaimed asphalt from milling under C4.3.6 becomes the property of the Contractor. For this project reclaimed asphalt shall not be used in new structural pavement or asphalt mixes.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				It may be used only for temporary haul roads or platforms after written approval. Any surplus reclaimed asphalt shall be removed from the Airport to a legal disposal facility.
	A4.3	**A4.3.7.4**	**Milling of existing asphalt**	Milling under C4.3.6 shall: • be carried out using cold milling machines that control depth and crossfall • produce a uniform textured surface free from loose material and dangerous steps • avoid damage to adjacent pavement. Local loose areas after milling shall be trimmed and filled with approved asphalt or BTB and compacted before overlay.
	C4.3	**C4.3.2**	**Measurement and payment – Rubber removal**	C4.3.2.1 covers removal of rubber deposits from the existing runway by approved high-pressure water blasting. C4.3.2.2 covers the Contractor's charges and profit on the Provisional Sum in C4.3.2.1.
	C4.3	**C4.3.6**	**Measurement and payment – Milling of asphalt layers**	C4.3.6.1 to C4.3.6.3 cover milling and removal of asphalt layers to average depths of 50 mm, 100 mm and 150 mm in runway, taxiway and GA areas. Rates include milling, loading, haul to stockpile or disposal, cleaning and shaping tapers at limits of milling.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
	C4.3	**C4.3.15**	**Measurement and payment – Preparing stockpile sites**	C4.3.15.1 and C4.3.15.2 cover preparation of stockpile sites for reclaimed asphalt and other existing materials. Rates include clearing, shaping and compacting the stockpile floor, constructing access and drainage, and reinstatement on completion.

- **COTO CHAPTER 5: EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION**

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
5			**EARTHWORKS AND PAVEMENT LAYERS: CONSTRUCTION**	
	A5.2		**FILL**	
		A5.2.3	**GENERAL**	
			A5.2.3.1 Fill Dimensions and shape	Fill dimensions and shape shall • Conform to the design cross-sections, levels and side slopes shown on the Drawings and in Volume 6 • Provide a uniform and stable formation for the overlying pavement layers and side drains • Be trimmed to the required lines and levels before construction of the next layer
			A5.2.3.2 Fill adjacent to existing fill	Where new fill is constructed against existing fill or natural ground • The existing face shall be benched in accordance with clause A5.2.7.3 before placing new fill • Benches shall be cut wide enough to accommodate compaction plant and to achieve full compaction over the bench width • New fill shall be compacted to the same requirements as the adjacent fill classification
			A5.2.3.3 Fill layer thickness	Fill shall be placed and compacted in layers as follows • Normal sand and gravel fill within the road prism

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				○ Compacted layer thickness not exceeding 200 mm as per BOQ item C5.2.2.1 • Where thicker fills are required, the total height shall be achieved by multiple 200 mm compacted layers • Any proposal by the Contractor to use thicker compacted layers shall be subject to prior approval and shall be supported by proof compaction tests
			A5.2.3.4 Fill compaction classification	
			a) MDD compaction	
			(i) Sand fill	• Sand fill used under BOQ item C5.2.2.1 shall consist of silty sand or sandy gravel from cut or borrow • Compaction requirement ○ Minimum 90 percent of modified AASHTO maximum dry density ○ Measured at optimum moisture content in accordance with the specified test method
			(ii) Normal fill and Coarse Fill	• Free draining sand fill under BOQ item C5.2.2.3 shall be treated as normal sand fill with a higher compaction requirement • Compaction requirement ○ Minimum 100 percent of modified AASHTO maximum dry density

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				○ Measured at optimum moisture content • Coarse fill, where used outside the BOQ items above, shall comply with the same or higher compaction requirement specified for the particular layer in the Drawings or in Volume 6
			(iii) Fill widening	• Widening of existing fills shall be compacted to the same percentage of modified AASHTO maximum dry density as the adjacent original fill • Benching, layer thickness and compaction plant requirements shall be as specified in clauses A5.2.3.3 and A5.2.7.3
		A5.2.5	**MATERIALS**	
			A5.2.5.2 Use of fill materials	Fill materials shall be used as follows • Normal fill from cut and borrow ○ Material type ▪ Silty sand or sandy gravel from approved cut or borrow sources ○ Use ▪ Embankments, backfilling and general fill within the road prism in compacted layers not exceeding 200 mm ○ Compaction requirement

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				▪ 90 percent of modified AASHTO maximum dry density as per BOQ item C5.2.2.1 • Free draining sand from cut and borrow o Material type ▪ Clean, free draining sand from approved cut or borrow sources o Use ▪ Selected zones where improved drainage is required ▪ Typically in upper parts of embankments or in areas shown on the Drawings or in Volume 6 o Compaction requirement ▪ 100 percent of modified AASHTO maximum dry density as per BOQ item C5.2.2.3 • Fill material shall not contain oversized rock, deleterious matter, rubbish or organic material that could compromise stability or long-term performance Where other fill materials or depths are required, these shall be explicitly shown on

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				the Drawings or in Volume 6 and shall meet the same minimum quality and compaction requirements as defined for the closest equivalent fill class above.
		A5.2.7	**EXECUTION OF THE WORKS**	

			A5.2.7.3 Benching for fill construction	• Where fill is constructed on side slopes steeper than 1 vertical to 4 horizontal, the existing slope shall be benched before placing new fill
				• Benches shall
				  o Have a minimum width of 1.0 m or the full width required to accommodate compaction plant, whichever is greater
				  o Be cut to near level or with a slight inward fall to key the new fill into the existing material
				• Fill shall then be placed and compacted in 200 mm layers over the benched surface to the specified density

			A5.2.7.4 Widening of fills	• When widening existing embankments
				  o The existing slope shall be benched as above
				  o New fill shall be placed in layers not exceeding 200 mm compacted thickness
				  o Compaction shall meet the same modified AASHTO

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				requirement as the adjacent fill classification
			A5.2.7.5 Rockfill embankment toe	• No separate rockfill embankment toe is specified in the BOQ • Where rockfill protection is required, for example at culvert outlets or erosion-prone toes, details shall be shown on the Drawings or in Volume 6 • Any rockfill toe so indicated shall be constructed with graded rock and filter protection as detailed on the Drawings
			A5.2.7.9 Fills higher than 10m	• Where fill heights greater than 10 m are shown on the Drawings o The width of benches, berms and shoulders, and the slope of side embankments, shall be as detailed in the design cross-sections o Construction shall follow any additional stability or sequencing requirements noted in Volume 6 • Where no fills higher than 10 m are shown, this clause shall not apply
			A5.2.7.10 Drainage blankets in fills	• Where drainage blankets in fills are indicated on the Drawings or in Volume 6 o The drainage blanket shall be constructed with the

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				specified sand filter and synthetic filter materials ○ Thickness, grading and extent shall match the details provided • Where no drainage blanket is shown, this clause shall not apply
			A5.2.7.11 Drainage blanket layer in cuttings	• Where a drainage blanket is specified in cuttings ○ The blanket shall consist of a graded filter sand and, where indicated, a synthetic filter layer ○ Thickness, grading and longitudinal fall shall be as detailed on the Drawings • Where no drainage blanket in cuttings is shown, this clause shall not apply
		A5.2.8	**WORKMANSHIP**	
			A5.2.8.2 Materials Quality and compaction requirements	• Materials used as fill shall comply with the quality requirements of SANS 1200 and COTO Chapter 5 for the relevant material class • Compaction requirements for fill shall be ○ Silty sand or sandy gravel normal fill ▪ 90 percent of modified AASHTO maximum dry density in 200 mm compacted layers

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				○ Free draining sand normal fill ▪ 100 percent of modified AASHTO maximum dry density in 200 mm compacted layers ○ Any other normal or coarse fill materials ▪ As specified in Table A5.2.8-1 or as stated on the Drawings or in Volume 6, but not less than the values above • Locations where different compaction requirements apply shall be clearly shown on the Drawings or scheduled in Volume 6
			Table A5.2.8-1	• For this project the following compaction requirements shall be adopted ○ Normal fill of silty sand or sandy gravel ▪ Minimum 90 percent of modified AASHTO maximum dry density ○ Normal fill of free draining sand ▪ Minimum 100 percent of modified AASHTO maximum dry density ○ Coarse fill, where specified ▪ Minimum compaction requirement shall not

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				be less than 95 percent of modified AASHTO maximum dry density unless a higher value is shown in the table or on the Drawings
	D5.2		**FILL PART D: GUARANTEES AND COMPLIANCE CERTIFICATES**	• No separate performance guarantees are required for fill construction under this Contract unless specifically called up in the Contract Data • Where compliance certificates are required for specific fills, for example in areas over structures or services, the extent and form of such certificates shall be defined in the Contract documentation and shall confirm that the fill meets the material quality and compaction requirements in A5.2.8.2

- **COTO CHAPTER 9: ASPHALT LAYERS**

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
9			**ASPHALT LAYERS**	
	A9.1		**ASPHALT LAYERS**	Asphalt layers for base and surfacing of runway, taxiway and general aviation pavements.
		A9.1.2	**DEFINITIONS**	
			Asphalt mix types	**Wearing Course – Stone Mastic Asphalt (SMA)** • Gap-graded stone-on-stone SMA • Mix design to AASHTO R46 and AASHTO M 325 • Performance criteria per Sabita Manual 35 • Rut depth ≤ 6 mm at 25 000 wheel passes (HWTT) • SIP ≥ 15 000 wheel passes • HWTT temperature: 58 °C • NMPS 14 mm • Compacted thickness ≥ 50 mm • Traffic class: Extreme (>100 million E80s; speed > 80 km/h) • Level III mix design • Binder: PG 58E-22 • The asphalt shall be paver laid **Wearing Course – Sand Skeletal Mix** • Sand skeletal, PG-framework compliant • Rut depth ≤ 6 mm at 20 000 wheel passes (58 °C) • NMPS 14 mm • Traffic Class E (>100 million MESAs; speed > 80 km/h) • Level II mix design • Binder: PG 58E-22

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				• The asphalt shall be paver laid **Bitumen Treated Base (BTB)** • Compacted thickness 100 mm • Design to Sabita Manual 35 and COTO requirements • Level II mix design • Binder: PG 58E-22 • Dense-graded mix • NMPS 20 mm • Suitable for high-load base layers • The BTB shall be paver laid
			Asphalt mixes Cold mix asphalt (CA)	• Hot mix asphalt shall be used for all BTB and asphalt surfacing layers • Warm mix asphalt technology may be used only where the Contractor demonstrates equal or better performance and durability and the Engineer gives written approval • Cold mix asphalt shall not be used for permanent structural layers and may only be used for temporary patching when specifically instructed by the Engineer
			Aggregate	• Aggregates shall comply with SANS 1083 • BTB shall use nominal maximum particle size 20 mm aggregate • Asphalt surfacing and Stone Mastic Asphalt shall use nominal maximum

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				particle size 14 mm aggregate • Coarse and fine fractions shall comply with Sabita Manual 35 requirements for stone and sand skeletal mixes as applicable
		A9.1.3	**GENERAL**	
			A9.1.3.1 Nominal mix proportions and application rates	Nominal mix proportions and application rates shall be taken from Tables A9.1.3-1, A9.1.3-2 and A9.1.3-3 of the COTO Standard Specifications for Road and Bridge Works, Chapter 9: Asphalt Layers, 2020 Edition and amended for this project as follows: • Stone skeletal BTB mixes shall use the column "Continuous graded base and surfacing, conventional and homogenous modified bitumen" in Table A9.1.3-1 with o nominal maximum particle size 20 mm o aggregate content from the 20 mm row of that column o active filler content 1.0 percent by mass of total mix using hydrated lime o project specific nominal binder content 5.2 percent by mass of total mix using PG 58E-22 plastomer-modified binder o aggregate and filler contents adjusted to remain consistent with the table and the specified binder content

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				• Sand skeletal wearing course mixes shall use the column "Continuous graded base and surfacing, standard and homogenous modified bitumen" in Table A9.1.3-2 with o nominal maximum particle size 14 mm o aggregate content from the 14 mm row of that column o active filler content 1.0 percent by mass of total mix using hydrated lime o project specific nominal binder content 6.3 percent by mass of total mix using PG 58E-22 plastomer-modified binder, within the 14 mm binder range of that table • Stone Mastic Asphalt, where scheduled, shall use the column "Stone Mastic Asphalt (SMA)" in Table A9.1.3-1 with o nominal maximum particle size 14 mm o aggregate, binder, active filler and cellulose fibre contents taken from the 14 mm Stone Mastic Asphalt row of that column Final binder and filler contents for all mixes shall be confirmed and optimised in the Contractor's approved D3 mix designs in accordance with Sabita Manual 35.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			Table A9.1.3-1: Nominal Mix Proportions of Stone Skeletal Mixes for Tender Purposes **Bitumen (type and grade according to Project Documentation) (%)**	For BTB stone skeletal mixes the bitumen type and grade shall be • 35/50 penetration grade bitumen • project specific nominal binder content 5.2 percent by mass of total mix, used in place of the binder percentage given in the 20 mm row of Table A9.1.3-1 The associated aggregate and active filler contents shall be adjusted so that the total mix composition remains consistent with the 20 mm "Continuous graded base and surfacing, conventional and homogenous modified bitumen" row in Table A9.1.3-1.
			Table A9.1.3-1: Nominal Mix Proportions of Stone Skeletal Mixes for Tender Purposes	• Reclaimed asphalt shall not be used in any BTB mix on this project • The column "Mixes containing reclaimed asphalt" in Table A9.1.3-1 shall not be applied for this Contract
			Table A9.1.3-1 *Note 2:	• Binder replacement with reclaimed asphalt in BTB mixes on this project is not permitted • The permissible binder replacement percentage for BTB mixes is 0 percent
			Table A9.1.3-2: Nominal Mix Proportions of Sand Skeletal Mixes for Tender Purposes	For sand skeletal wearing course mixes the binder type, grade and nominal binder content shall be: • Wearing course for runway, taxiway and general aviation surfacing

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			Bitumen (type and grade according to Contract Documentation) (%)	○ binder type PG 58E-22 plastomer-modified binder ○ nominal binder content 6.3 percent by mass of total mix within the 5.5 to 6.5 percent binder range of the 14 mm row in Table A9.1.3-2 For these sand skeletal wearing course mixes: • nominal maximum particle size shall be 14 mm • aggregate content and active filler content 1.0 percent hydrated lime shall be taken from the 14 mm "Continuous graded base and surfacing, standard and homogenous modified bitumen" row in Table A9.1.3-2 Final binder contents shall be confirmed by Sabita Manual 35 mix designs.
			Table A9.1.3-2: Nominal Mix Proportions of Sand Skeletal Mixes for Tender Purposes	• Reclaimed asphalt shall not be used in any sand skeletal wearing course mix on this project • The column "Mixes containing reclaimed asphalt" in Table A9.1.3-2 shall not be applied for this Contract
			Table A9.1.3-2 *Note 2:	• Binder replacement with reclaimed asphalt in sand skeletal wearing course mixes on this project is not permitted • The permissible binder replacement percentage for sand skeletal wearing course mixes is 0 percent

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA

			b) Bond coat and rolled-in chippings	Bond coat application rates shall be based on Table A9.1.3-3 of the COTO Standard Specifications for Road and Bridge Works, Chapter 9: Asphalt Layers, 2020 Edition, with the following project specific requirements
				
				• product for pavement bond coat
				  o 30 percent stable grade bituminous emulsion
				• nominal application rates
				  o standard COTO value for pavement surfaces 0.55 litres per square metre in Table A9.1.3-3
				  o project specific nominal application rate 0.50 litres per square metre applied over the full width of the prepared surface using a calibrated distributor
				• bridge deck bond coat, if asphalt surfacing to bridge decks is added to the Contract
				  o application rate 0.40 litres per square metre in accordance with Table A9.1.3-3
				• rolled in chippings
				  o rolled in chippings are not required on this project
				  o the rolled in chipping application rates in Table A9.1.3-3 shall not be used
				
				This wording answers the notes to the compiler and ties every nominal mix and

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				bond coat item directly to the COTO 2020 tables with project specific values.
		A9.1.4	**DESIGN BY THE CONTRACTOR**	
			A9.1.4.1 Mix Designs	The Contractor shall carry out D3 mix designs for every asphalt mix used on the project and shall submit the designs for approval before production. The required mixes are: o **BTB base** o Mix type: stone skeletal, dense-graded o Specific mix type: Bitumen Treated Base (BTB) o Mix Design Level: Level II in terms of Sabita Manual 35 o Nominal maximum particle size (NMPS): 20 mm o Binder type: PG 58E-22 plastomer-modified binder o Nominal compacted layer thickness: 100 mm o **Sand skeletal wearing course surfacing for runway, taxiway and general aviation pavements** o Mix type: sand skeletal, continuous graded o Specific mix type: sand skeletal wearing course surfacing o Mix Design Level: Level II in terms of Sabita Manual 35 o Nominal maximum particle size (NMPS): 14 mm

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				○ Binder type: PG 58E-22 plastomer-modified binder ○ Nominal compacted layer thickness: 50 mm ○ **Runway Stone Mastic Asphalt (where scheduled)** ○ Mix type: stone skeletal, gap-graded Stone Mastic Asphalt (SMA) with stone-on-stone skeleton ○ Specific mix type: Stone Mastic Asphalt (SMA) overlay to runway ○ Mix Design Level: Level III in terms of Sabita Manual 35 ○ Nominal maximum particle size (NMPS): 14 mm ○ Binder type: PG 58E-22 polymer-modified binder with grade selected to meet SMA design requirements in AASHTO R46 and AASHTO M 325 and Sabita Manual 35 ○ Nominal compacted layer thickness: minimum 50 mm Each mix shall be proven by means of approved trial sections that demonstrate compliance with the specified volumetric, mechanical and surface performance requirements before full production begins.
			A9.1.4.2 Mix design requirements	For every asphalt mix listed in clause A9.1.4.1 the Contractor shall ensure that the mix design submission includes, as a minimum, the following information:

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA

				• Mix type
				  ○ Stone skeletal or sand skeletal
				  ○ Continuous graded or gap graded
				• Specific mix designation
				  ○ BTB base
				  ○ Sand skeletal wearing course surfacing for runway, taxiway and general aviation pavements
				  ○ Stone Mastic Asphalt runway overlay where scheduled
				• Level of design required
				  ○ BTB: Design Level II
				  ○ Sand skeletal wearing course surfacing: Design Level II (or as scheduled in the Project Documentation)
				  ○ Stone Mastic Asphalt: Design Level III
				• Nominal maximum particle size of the aggregate
				  ○ BTB: 20 mm
				  ○ Sand skeletal wearing course mixes: 14 mm
				  ○ Stone Mastic Asphalt: 14 mm
				• Binder type and grade
				  ○ BTB: 35/50 penetration grade bitumen
				  ○ Runway wearing course surfacing: AP2 polymer modified binder

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				○ Taxiway and general aviation wearing course surfacing: AP1 polymer modified binder ○ Stone Mastic Asphalt: polymer modified binder of a grade compatible with the SMA design in accordance with AASHTO R46 and M325 • Nominal compacted layer thickness for each mix ○ BTB: 100 mm ○ Wearing course surfacing layers: 50 mm ○ Stone Mastic Asphalt: 50 mm Warm mix asphalt technology is not prescribed for this project. The Contractor may only use warm mix technology where a specific proprietary process is proposed, the process is demonstrated to achieve performance and durability that are at least equivalent to the specified hot mix asphalt, and the Engineer gives written approval for its use. The extended performance provisions in Part D of Chapter 9 apply to asphalt surfacing that is placed under a performance guarantee in terms of Section D9.1. The Contractor shall ensure that the mix designs and construction methods for these surfacing layers satisfy all performance criteria and assessment procedures specified in Part D, in addition to the volumetric and mechanical requirements in Sabita Manual 35.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
		A9.1.5	**MATERIALS**	
			A9.1.5.2 Bituminous binders for asphalt mixes	The following binder types and grades shall be used on this project • **BTB base layers** o Binder type 35/50 penetration grade bitumen o Binder to comply with the latest SANS specification for paving grade bitumen and with the applicable Sabita guidelines • **Runway wearing course surfacing** o Binder type AP2 homogeneous polymer modified binder o Performance grade in accordance with the latest Sabita TG1 for AP2 binders o Binder to comply with the latest SANS specification for polymer modified binders and the manufacturer's published product properties • **Taxiway and GA wearing course surfacing** o Binder type AP1 homogeneous polymer modified binder o Performance grade in accordance with the latest Sabita TG1 for AP1 binders o Binder to comply with the latest SANS specification for polymer modified binders

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				and the manufacturer's published product properties • **Runway Stone Mastic Asphalt (where scheduled)** o Binder type polymer modified binder compatible with the SMA design o Performance grade selected to satisfy the SMA performance requirements in Sabita Manual 35 and AASHTO R46 and M325 o Binder to comply with the latest SANS specification for polymer modified binders and the manufacturer's published product properties Project conditions used for binder selection are • Temperature zone o Temperate or Coastal as defined in the COTO Standard Specifications for Road and Bridge Works • Traffic speed o High speed airside operations on the runway o Low speed taxi and apron operations on taxiways and general aviation stands Reclaimed asphalt shall not be recycled into any asphalt mix on this project • No recovered binder from reclaimed asphalt will be used

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				• No performance grade classification of recovered binder is required • Indicative grading and percentage of reclaimed asphalt are not applicable Only homogeneous modified binders are permitted for surfacing layers • Non homogenous modified binders, such as bitumen rubber binders, shall not be used on this project unless specifically introduced by a formal Contract amendment All binder types and grades shall conform to the relevant requirements and product properties listed in the most recent editions of the SANS specifications, COTO Standard Specifications for Road and Bridge Works, Sabita manuals and the manufacturer's technical data sheets.
			A9.1.5.3 Bitumen bond coat	The bitumen bond coat shall comply with clause A9.1.3(b) and with the standard COTO requirements • Bond coat product ○ 30 percent stable grade bituminous emulsion • Application to follow Table A9.1.3-3 of the COTO Standard Specifications for Road and Bridge Works, Chapter 9: Asphalt Layers, DS October 2020 Edition, with the project specific nominal rate of 0.50 litres per square metre for pavement surfaces

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				• The surface shall be clean, dry and free from dust and loose material before application • Edges, joints and restricted areas shall be treated by hand using a suitable portable sprayer For surfacing layers that fall under the extended performance guarantee in Part D, the bond coat and interface shall be considered part of the performance system and shall satisfy the performance requirements and assessment procedures defined in Section D9.1 in addition to the materials requirements above.
			PA9.1.5.4 Aggregates	
			a) Aggregate Properties	Aggregates shall comply with SANS 1083 and with the gradings and quality requirements of COTO Chapter 9 • **a) Aggregate properties** o Aggregate properties shall comply in full with Table A9.1.5-1 of COTO Chapter 9 o No relaxation, reduction or project specific amendment to the Table A9.1.5-1 limits is permitted • **c) Fine aggregate grading** o Fine aggregate grading and added material percentage shall comply with the standard COTO requirements for the specified mix type

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				○ No project specific change to the added material percentage is permitted The Contractor shall declare the aggregate source and class for each mix and shall not change aggregate sources without the Engineer's written approval.
			c) Fine aggregate grading	
			A9.1.5.5 Fillers	Active filler, where required, shall be • Hydrated lime at 1.0 percent by mass of total mix for BTB and sand skeletal wearing course mixes Other mineral fillers shall comply with the requirements of COTO Chapter 9 and Sabita Manual 35 for the relevant mix type.
			Table A9.1.5-7: Filler requirements	Where additional fillers are used, the following project specific requirements apply • **Baghouse fines** ○ May only be used as filler where they comply with Table A9.1.5-7 of COTO Chapter 9 ○ Shall comply with the filler quality requirements and test methods in Sabita Manual 35 for the relevant mix type ○ Shall be taken from the same aggregate source as the parent aggregate for that mix, unless otherwise approved • **Limestone dust**

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				○ May only be used as filler where it complies with Table A9.1.5-7 of COTO Chapter 9 ○ Shall comply with the filler quality requirements and test methods in Sabita Manual 35 for the relevant mix type No other industrial by product fillers may be used unless the Contractor submits full supporting test data and obtains the Engineer's written approval.
			A9.1.5.8 Mix properties	Mix properties shall comply with Sabita Manual 35 design level requirements as follows: • BTB stone skeletal mixes ○ Design Level II • Sand skeletal wearing course mixes for runway, taxiway and general aviation pavements ○ Design Level II, or as scheduled in the Project Documentation • Runway Stone Mastic Asphalt mixes, where scheduled ○ Design Level III For each mix the Contractor shall demonstrate compliance with the relevant volumetric, stiffness, strength, rut resistance and durability criteria in Sabita Manual 35 for the stated design level.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
			A9.1.5.9 Asphalt Reinforcing	No asphalt reinforcing is scheduled in the bill of quantities for this project • Asphalt reinforcing, such as interlayer grids or fabrics, shall only be used where it is specifically added by formal Contract amendment • Where asphalt reinforcing is required, the Contractor shall submit full details of the proposed system, including type, tensile properties, temperature resistance, bonding system, installation method and intended function, and shall obtain the Engineer's written approval before use.
		A9.1.6	**CONSTRUCTION EQUIPMENT**	
			A9.1.6.3 Paver	Pavers used for asphalt placement on this project shall comply with the following • Self-propelled pavers fitted with automatic control of level and crossfall • Levelling beams and sensing systems shall comply with the requirements of COTO Chapter 9 for the relevant class of work • No reduction in levelling beam length or sensing span below the COTO minimum values is permitted • Pavers shall be capable of laying the specified layer thicknesses of BTB, sand skeletal wearing course and

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Stone Mastic Asphalt in a single pass with uniform thickness and texture • Pavers operating on airside pavements shall comply with Airports Company South Africa airside operating procedures, including foreign object debris control and fluid leak management
			A9.1.6.5 Rollers	Compaction equipment shall comply with COTO Chapter 9 and the following project specific constraints • Rollers shall be suitable for the specified layer types and thicknesses o BTB 100 mm layers o Sand skeletal wearing course 50 mm o Stone Mastic Asphalt surfacing 50 mm where scheduled • Roller types may include steel drum, pneumatic tyred and combination rollers as appropriate for the mix and layer thickness • On bridge decks only oscillating type vibratory rollers may be used o High amplitude vibratory modes are not permitted on bridge decks o Roller operating speeds on bridge decks shall be controlled to limit dynamic loading in accordance with the bridge engineer's requirements

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA

				• On airside pavements the Contractor shall
				  ○ Operate rollers in accordance with airside access control procedures
				  ○ Manage foreign object debris at all times
				  ○ Maintain roller tyres and drums in a clean condition to avoid surface damage
				• The Contractor shall provide, on request, calibration and configuration records for all compaction equipment
				  ○ Mass of rollers
				  ○ Drum widths
				  ○ Tyre pressures for pneumatic tyred rollers
				  ○ Vibration and oscillation settings

		A9.1.7	**EXECUTION OF THE WORKS**	
			A9.1.7.5 Bond coat	Bond coat application shall comply with clause A9.1.5.3 and with the standard requirements of COTO Chapter 9 • Bond coat product shall be a 30 percent stable grade bituminous emulsion • Application rate for pavement surfaces shall be 0.50 litres per square metre, as an amendment to the nominal 0.55 litres per square metre value in Table A9.1.3-3 of the COTO Standard Specifications for

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Road and Bridge Works, Chapter 9: Asphalt Layers, 2020 Edition • The existing surface shall be clean, dry and free from dust, loose material, fuel, oil and contaminants before spraying • The bond coat shall be applied using a calibrated distributor that is suitable for airside work • Edges, joints and restricted areas shall be treated by hand using a suitable portable sprayer • Sufficient curing time shall be allowed before placing the asphalt overlay so that the bond coat does not pick up under construction traffic or paver tracks Where asphalt surfacing forms part of the extended performance guarantee in Part D, the bond coat and interface shall be considered part of the performance system and shall not be allowed to compromise the performance of the surfacing.
			A9.1.7.6 Placing the asphalt	Asphalt shall be placed in accordance with COTO Chapter 9 and the following project specific requirements • Asphalt shall be placed using pavers with automatic control of level and cross section • Continuity of paving shall be maintained as far as is practical to minimise the number of construction joints

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA

				• Handwork shall be limited to areas where paver access is not possible
				  o Tie-ins to existing work
				  o Confined areas at structures and appurtenances
				• Longitudinal joints
				  o Shall be offset from joints in underlying layers
				  o Shall be formed as hot joints wherever practical by overlapping adjacent paving runs
				  o Shall be adequately compacted to achieve the specified density at the joint
				• Transverse joints
				  o Shall be formed at planned locations
				  o Shall be cut back where necessary to achieve a full thickness face and sound material before resuming paving
				• Compaction
				  o Shall be carried out using the approved roller train and sequence for each mix
				  o Shall achieve the specified density and air void content in accordance with the approved mix design and COTO requirements
				• On airside pavements the Contractor shall schedule paving operations to avoid interference with aircraft operations and shall maintain work

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				zones in accordance with airside safety procedures
			A9.1.7.9 Applying rolled-in chippings	Rolled-in chippings are not required for any asphalt layer on this project • Pre-coated chippings shall not be applied to BTB, sand skeletal wearing course or Stone Mastic Asphalt surfacing under this Contract • The minimum specified final surface texture for runway and taxiway surfacing shall remain as set out in the COTO Standard Specifications and the relevant Airports Company South Africa and ICAO friction and texture requirements • Surface texture and skid resistance shall be achieved by the specified asphalt mixes and construction methods, not by rolled-in chippings
			A9.1.7.11 Surfacing of bridge decks	No asphalt surfacing of bridge decks is included in the scope of this Contract • If asphalt surfacing to bridge decks is added by formal amendment, the surfacing type and nominal thickness shall be o Specified in the amendment o Compatible with the structural requirements of the bridge o Designed and constructed in accordance with COTO Chapter 9 and the bridge designer's requirements

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
		A9.1.8	**WORKMANSHIP**	
			A9.1.8.8 Sampling	
			b) Coring of completed layers	The Contractor shall provide suitable coring machines capable of cutting 100 mm or 150 mm diameter cores from completed asphalt layers • Coring shall be carried out at the locations and to the frequencies specified in the quality control plan or as instructed by the Engineer • Each core shall be o Marked and referenced to its chainage, offset and layer o Extracted without damaging the surrounding pavement o Labelled and protected against damage and contamination during handling and transport • The holes left by coring shall be o Thoroughly cleaned o Filled with an approved asphalt mix of similar type and gradation o Properly compacted and finished flush with the surrounding surface
	D9.1		**ASPHALT LAYERS**	
		D9.1.1	**SCOPE**	The surfacing layers identified in the Contract as performance-guaranteed asphalt surfacing shall be subject to an extended performance guarantee

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				• The duration of the performance guarantee for these surfacing layers shall be three years from the date of issue of the Taking-Over Certificate for the works to which the surfacing relates
		D9.1.2	**DEFINITIONS**	
			Performance Period:	• The period of three years after the date of issue of the Taking-Over Certificate during which the performance of the specified asphalt surfacing is monitored and assessed
			Performance Guarantee Period:	• The period of three years after the date of issue of the Taking-Over Certificate during which the performance guarantees remain in force.
			Performance Guarantees:	• Two separate on-demand bank guarantees shall be provided for the surfacing covered by this Part • Each guarantee shall be equal to five percent of the value of the performance-guaranteed surfacing • The guarantees shall remain in force for the full Performance Guarantee Period and shall be released in accordance with Table D9.1.3-1
		D9.1.3	**GENERAL**	
			D9.1.3.1 Extended Performance Warranty	The specified asphalt surfacing shall be subject to an extended performance warranty over the Performance Period

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				• The performance of the surfacing shall be assessed in accordance with clauses D9.1.9 and D9.1.10 • The results of the assessments shall determine the release of the performance guarantees in accordance with Table D9.1.3-1
			Table D9.1.3-1: Programme of release of guarantees	• Acceptable performance of the surfacing two years after issue of the Taking-Over Certificate o Release of the first guarantee of five percent • Acceptable performance of the surfacing three years after issue of the Taking-Over Certificate o Release of the second guarantee of five percent
		D9.1.8	**QUALITY OF MATERIALS AND WORKMANSHIP**	
			D9.1.8.2 Permissible deviations	
			e) Layer Thickness	Where existing asphalt layers are not milled and replaced, the required nominal thickness of the new surfacing shall be determined with reference to the rut depths recorded in Volume 6 of the Contract Documentation • The Contractor shall use the reported rut depths to propose nominal thicknesses that will restore the required surface level and structural capacity • The proposed nominal thicknesses shall be submitted to the Engineer for

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				review and approval before construction • Once approved, the nominal thicknesses and permissible deviations shall be treated as the specified values for the purposes of quality control and acceptance
		D9.1.9	**ASSESSMENT CRITEREA**	Assessment of surfacing performance under this Part shall cover, as a minimum, the following parameters • Rut depth • Macro-texture, for example mean profile depth • Skid resistance or friction, using Airports Company South Africa approved test methods • Surface defects such as o Cracking o Raveling o Bleeding or flushing o Potholes and local failures • Any additional performance parameters specified in the Contract after consultation with Airports Company South Africa The assessment methods and threshold values shall comply with the relevant Sabita guidance and Airports Company South Africa procedures referenced in the Contract Documentation.
		D9.1.10	**ACCEPTANCE CRITERIA**	
			D9.1.10.1 Visual Assessments	• Interim visual assessments of the performance-guaranteed surfacing

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				shall be carried out at the end of years 1, 2 and 3 after the date of issue of the Taking-Over Certificate • Where required by the Contract, instrumental assessments of texture and friction shall be carried out at the same times • The assessments shall document the condition of the surfacing, including o Cracking o Rutting o Raveling o Bleeding or flushing o Potholes and other defects • The results of these assessments shall be used to determine whether the surfacing complies with the acceptance criteria for the Performance Period and to inform decisions on release of the performance guarantees in terms of Table D9.1.3-1
			D9.1.10.2 Deflection	At the end of the Performance Guarantee Period the structural capacity of the pavement supporting the performance-guaranteed surfacing shall be verified by deflection measurements • Deflection testing, for example using a Falling Weight Deflectometer, shall be carried out in accordance with the procedures specified in the Contract Documentation • The measured deflections and derived structural indices shall

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				comply with the acceptance criteria presented in Table D9.1.10-2 of Part D • Where the acceptance criteria are not met, the Contractor's obligations and any required remedial works shall be determined in accordance with the Contract conditions and Part D provisions

▪ CHAPTER 11 – ANCILLARY ROADWORKS – PROJECT SPECIFICATION

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
11			A11.1 – Pitching, Stonework and Protection Against Erosion	Grouted stone pitching constructed on prepared in situ material or a concrete bed where scheduled. Stones hand-placed, interlocked and fully grouted with cement–sand mortar. Concrete bed minimum thickness 75 mm and 20 MPa at 28 days. Herbicide and ant poison supplied and applied using approved products.
	A11.1	A11.1.5	Materials	Stone: hard, durable rock 150–300 mm. Mortar: 1:4 cement to sand mix. Concrete bed: SANS 10100 compliant. Herbicide and ant poison applied per manufacturer specifications.
	A11.1	A11.1.7	Execution of the Works	Excavate foundations to drawing levels. Compact founding material to 93% Mod AASHTO. Place stones to line and slope, grout joints fully. Movement joints where shown on drawings.
			A11.2 – Non-Structural Gabions	Gabion boxes and mattresses assembled from galvanized double-twisted mesh. Filled with durable rock in ≤300 mm layers. Geotextile Grade 3 filter placed beneath all gabions. Units tied with lacing wire at ≤150 mm spacing.
	A11.2	A11.2.5	Materials	Gabion mesh per COTO requirements. Mattresses 0.3 m and 0.5 m deep with 80×100 mm mesh. Stone: 100–200 mm (boxes), 75–150 mm (mattresses).

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Geotextile: Grade 3 synthetic filter membrane.
	A11.2	A11.2.7	Execution of the Works	Excavate trenches to required dimensions. Prepare bedding, place geotextile with 300 mm overlaps. Assemble units, place and compact stone. Close lids and lace securely.
			A11.7 – Road Markings and Road Studs	Permanent and temporary markings for runway, taxiway and GA. All markings follow SACAA and ICAO Annex 14. Temporary markings applied at half rate. Setting out and premarking required before final application.
	A11.7	A11.7.5	Materials	Paint: SANS 731 water/solvent-based. Thermoplastic: EN 1436 compliant. Glass beads: SANS 51423. Minimum luminance and retro-reflective values apply.
	A11.7	A11.7.7	Execution of the Works	Clean surface thoroughly. Apply markings at required width, thickness and pattern. Machine application preferred. Temporary markings at half rate.
			A11.9 – Finishing the Road and Road Reserve	Daily end-of-shift runway cleaning. Remove debris, loose material and FOD. Ensure surface is safe before releasing to operations.
	D11.7	Performance	Performance Guarantees	Guarantee period: 3 years from TOC. Two guarantees of 5% each.

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				Retro-reflectivity, luminance, durability and skid resistance checked at 12, 24 and 36 months. Failure triggers mandatory remedial work.

SCHEDULE B: ELECTRICAL AND AIRFIELD GROUND LIGHTING WORKS

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
10			**ELECTRICAL AND AIRFIELD GROUND LIGHTING WORKS**	
	A10.1		**GENERAL**	
		A10.1.1	**Guiding Documents**	The Contractor shall supply all labour, materials, plant, testing equipment, temporary works and supervision necessary to execute the electrical Airfield Ground Lighting (AGL) refurbishment works in accordance with: ICAO Annex 14, Volume I – Aerodrome Design and Operations ICAO Doc 9157 – Aerodrome Design Manual (Part 4 – AGL) SANS 10109-2, SANS 1186, SANS 10142-1 (as applicable) Manufacturer installation requirements. The detailed design document. Issued for Construction (IFC) drawings and BOQ
		A10.1.2	**Continuity of Service**	The Contractor is responsible for ensuring the AGL system remains operational for aircraft movements unless a shutdown window is formally granted by the Employer.
	10.2		**MATERIAL**	
		A10.2.1	**General**	All supplied materials shall be new, ICAO-compliant, and from an approved airfield lighting manufacturer. The technical specification and proof of ICAO compliancy of equipment shall be submitted prior to procurement for verification and

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
				approval by the engineer. The contractor's scope entails the supply, delivery and installation of each material item up to full compliance and usability.
		A10.2.2	**AGL primary circuits**	The contractor shall install primary AGL cable in ducts or conduits with all necessary heat-shrink and watertight connectors.
		A10.2.3	**AGL secondary circuits**	The contractor shall install isolating transformers, secondary leads and connectors and all elevated and in-pavement fixture bases.
		A10.2.4	**Lighting fixtures**	The installation of all AGL fixtures within the scope, including the runway centreline barrettes, Touchdown Zone barrettes, Runway edge lights, Threshold / runway end / stop bar lights (where required)
		A10.2.5	**Ducts, pits and manholes**	The installation to full compliance of AGL specific polymer concrete pits, Cable markers and warning tape
	10.3		**EXECUTION OF WORKS**	
		10.3.1	**Cable Installation**	All cable installations shall maintain appropriate separation between circuits, minimum bend radii and avoid joints. Route secondary leads from isolating transformers to each light fitting using approved watertight connectors. All works to comply with ICAO Doc 9157 Part 5 and Annex 14.
		10.3.2	**Lighting Fixtures**	Vertically and horizontally align lights using manufacturer's aiming tools. Ensure in-pavement fittings are flush with the pavement level. Install fixtures at the exact spacings as per ICAO Annex 14.
		10.3.3	**Critical Constraints**	No light fixture or pit may protrude into the graded safety area beyond ICAO limits. Final installation must achieve full watertightness against moisture ingress. All works to comply with ICAO Doc 9157 Part 5 and Annex 14.
	10.4		**HANDOVER REQUIREMENTS**	

CH	SEC	CL	SUB-CLAUSE	SPECIFICATION DATA
		10.4.1	**Documentation**	The Contractor shall provide redline markup drawings showing exact cable routes and pit references, as-built drawings (DWG and PDF), test and commissioning results, OEM manuals, warranties, and maintenance instructions
		10.4.2	**Testing**	The Contractor shall carry-out all works in each scope to full operability and compliance with the relevant standards and design specifications. Post installation tests shall be done on all works to verify compliance, and the test results shall be filed as part of the close-out report.
		10.4.3	**Training**	The Contractor shall provide onsite training to airport maintenance staff on fixture replacement, transformer replacement and CCR isolation and reset procedure.

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED
CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

C3.7: ACSA SPECIFICATIONS

The Specifications herein are Specifications prepared by the employer applicable to this contract. Five Specifications are included:

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C3.7.1: OCCUPATIONAL HEALTH AND SAFETY SPECIFICATIONS

This part of the Specifications contains comprehensive occupational health and safety specifications.

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SECTION 1: ACSA OHS SPECIFICATIONS

1. INTRODUCTION

1.1 Purpose of the Occupational Health and Safety Specification

The purpose of the OHSS is to assist Contractors to achieve compliance with the Occupational Health and Safety law, in order to reduce incidents and injuries. The OHSS will be implemented during the construction of this project or any construction activity that the Employer has control over.

The OHSS is a performance specification to ensure that the Employer and any bodies that enter into formal agreements with the Employer viz. Agents, Consultants and Contractors achieve an acceptable level of OHS performance. No advice, approval of any document required by the OHSS such as hazard identification and risk assessment action plan or any other form of communication from the Employer shall be construed as an acceptance by the Employer of any obligation that absolves the Contractor from achieving the required level of performance and compliance with legal requirements. Further, there is no acceptance of liability by the Employer which may result from the Contractor failing to comply with the OHSS, i.e. the Contractor remains responsible for achieving the required performance levels.

1.2 Implementation of the Occupational Health and Safety Specification

This OHSS forms an integral part of the Contract, and Contractors are required to make it an integral part of their Contracts with Sub-Contractors and Suppliers. It will be disseminated by the Employer to persons responsible for and inspection of the design of the infrastructure works, who will ensure that it is included in the Tender Document(s) issued to prospective Contractors. The prospective Contractors shall incorporate the requirements of the OHSS in their submission of tenders to the Employer as well as provide health and safety plans for evaluation.

This specification must be read in conjunction with the OHS Act No 85 of 1993 (as amended), the Regulations as published in Government Gazette No 7721 of 18 July 2003 as well as the General Safety Regulations published in Government notice No. R 1031 of 30 May 1986, as amended.

The OHS Act Agreement in this document (Returnable Schedules) must be fully completed by the Contractor.

2. STANDARD OCCUPATIONAL HEALTH AND SAFETY SPECIFICATION

2.1 Scope

This OHSS covers the requirements for eliminating and mitigating incidents and injuries in all Employer controlled projects.

The scope also addresses legal compliance, hazard identification and risk control, promoting a health and safety culture amongst those working on ACSA projects and those affected by the activities taking place in and around them.

2.2 Interpretations

2.2.1 Application

The OHSS contains clauses that are applicable to building / construction and that impose pro-active controls associated with activities that impact on human health and safety as they relate to plant and machinery.

Compliance to the requirements of the OHSA, Construction Regulations and General Safety Regulations is in addition to the requirements of the OHSS and is part of the Contractor's responsibility. The Employer will through the Agents, as appointed, monitor that the Contractor complies with the requirements of the OHSA and will not prescribe to the Contractor how such compliance is achieved.

Definitions

The definitions used will be those set out in the Regulation Gazette No 7721 of 18 July 2003 with the following addition:

ACSA: Airports Company South Africa

Hazard Identification and Risk Assessment and Risk Control:
Means a documented plan, which identifies hazards, assesses the risks and details the control measures and safe working procedures which are to be used to mitigate and control the occurrence of hazards and risks during construction or operation phases.

Health and Safety Management Plan:
Means a documented plan which addresses the OHSS requirements hazards identified and include safe working procedures to mitigate, reduce or control the hazards identified.

Induction Training:
Means once off introductory training on general health and safety issues as well as project specific matters given to all employees before commencement of work or other visitors to the site.

Risk:
Means the probability or likelihood that a hazard can result in injury or damage.

Site:

Means the area in the possession of the Contractor for the construction of the works. Where there is no demarcated boundary it will include all adjacent areas, which are reasonably required for the activities for the Contractor, and approved for such use by the Engineer.

The Act:
Means, unless the context indicates otherwise, the Occupational Health and Safety Act, 1993 (Act NO. 85 of 1993) and Regulations promulgated there under.

Contractor:
The Contractor terminology used in these specifications shall be deemed to cover Principle Contractor, Contractors and Sub-Contractors.

3. REQUIREMENTS AT TENDER STAGE

The Contractor shall make available the following with his completed tender:

A Health and Safety Plan as described in Regulation 7 of the Construction Regulations. The Safety Plan must be based on the Construction Regulations 2014 and this specification and will be subject to approval by the Employer. This will include a Hazard Identification and Risk Assessment appropriate to the project, expansion of Annexure D, and a declaration to the effect that he has the competence, completion of Occupational Health and Safety Questionnaire, and necessary resources to carry out the work safely in compliance with the Construction Regulations 2014.
Failure to submit the foregoing with his tender, will lead to the conclusion that the Contractor is not able to carry out the work under the contract safely in accordance with the Construction Regulations and may result in the tender being disqualified.

4. NOTIFICATION OF COMMENCEMENT OF CONSTRUCTION WORK

Due to the estimated project cost the Clients Health and Safety Agent will apply for a construction works permit. No construction or related work such as site establishment or delivery of any equipment or material may commence before the construction works permit has been received and the Engineer approved the start of the works.

The Contractor will have **10 days** after the Acceptance of Tender, to submit the required Documentation for the Department of Labour. This includes:

- Safety Plan with Baseline Risk Assessment
- Approved SHEQ BOQ- (priced)

- Signed mandatory agreement (Sec 37,2 & 5.1(k))
- Site organogram
- Valid proof of letter of good standing
- Profile of appointed Construction Manager in terms of CR 8(1)
- Profile of appointed Health and safety Officer in terms of CR 8(5)
- Profile of appointed Health and Safety Manager in terms of CR 8

A copy of the construction works permit must be conspicuously displayed at the main entrance to the site as well as be kept on the health and safety files, and be available for inspection by inspectors, Employer, Engineer, employees and other duly authorised persons on site.

5. GUIDELINES FOR THE DEVELOPMENT OF A HEALTH & SAFETY PLAN

5.1 Background

In terms of the Construction Regulations [Regulation 5 (1) (b)] of the Occupational Health and Safety Act, No 85 of 1993, the Client is required to compile an Occupational Health and Safety specification for each of its projects and the Contractor, appointed by the Client in terms of Regulation 5 (1) (k), is required to prepare an Occupational Health and Safety Plan. This plan has to be prepared in terms of Regulation 7 (1)(a) as well as the Client's Occupational Health & Safety Specification. In terms of Regulation 5 (1)(l), the Client and the Contractor are required to agree on the Occupational Health and Safety Plan before any work may commence.

5.2 Framework for an Occupational Health and Safety Plan

5.2.1 Introduction

The Contractor has to demonstrate to the Client that he has a suitable and sufficiently documented Occupational Health and Safety Plan as well as the necessary competencies, experience and resources to perform the construction work safely. The Contractor is required to submit, the following documentation for perusal and verification by the Client:

- Management Structure including an organogram – Tender Stage
- Quality Plan – Tender Stage
- Human Resources Plan – Tender Stage
- Registered Workplace Skills Plan
- "Letter of good standing" from the Compensation Commissioner or licensed compensation insurer – Tender Stage
- Proof of induction and other training of employees

- Example copies of minutes of previous Occupational Health and Safety Committee meetings and copies of Incident Investigation Reports

5.2.2 Contents of an Occupational Health and Safety Plan

The Occupational Health and Safety Plan shall include the following:

5.2.2.1 Occupational Health and Safety Management Programme

- Management of Occupational Health and Safety risks
- Occupational Health and Safety structures and appointments
- Programme of Occupational Health and Safety inspections
- Occupational Health and Safety Representatives
- Occupational Health and Safety committee

5.2.2.2 Statement Regarding the Communication and Management of the Work

- Management structure and responsibilities
- Occupational Health and Safety objectives for the project and arrangements for monitoring and review of Occupational Health and Safety performance
- Arrangements for regular liaison between parties on site
- Consultation with the workforce
- The exchange of design information between the Client, Engineer, supervisors and subcontractors on site
- Handling design changes during the project
- Selection and control of subcontractors
- The exchange of Occupational Health and Safety information between all subcontractors
- Security
- Site induction and on site training
- Facilities and first-aid
- The reporting and investigation of accidents and incidents
- The production and approval of risk assessments and method statements
- Site Occupational Health and Safety rules
- Fire and emergency procedures
- Reporting to the Client i.e. results of Occupational Health and Safety inspections.
- Incident investigations and committee meetings
- Reporting of incidents to the Department of Labour and Compensation Commissioner where appropriate

6. APPOINTMENT OF SAFETY PERSONNEL

6.1 Construction Supervisor

In terms of Section 16 of the Act, the Chief Executive Officer of the Contractor may delegate, in writing, part or all of his powers to a suitable person on the site.

The Contractor shall appoint a full-time Construction Manager, in writing, in terms of Section 8.(1) of the Construction Regulations with the duty of supervising the performance of the construction work as well as ensuring occupational health and safety compliance.

He may also have to appoint one or more competent employees to assist the construction manager where justified by the scope and complexity of the works as well as an Alternate Construction Manager when applicable.

6.2 Construction safety officer

In terms of Section 8(5) of the Construction Regulations the Contractor shall appoint in writing a full-time Construction Safety Officer which is duly accredited by SACPCMP. The Safety Officer shall have the necessary competence and resources to perform his duties diligently.

Provision will be made in the Bill of Quantities to cover the cost of a dedicated construction safety officer appointed after award of the contract.

6.3 Health and safety representatives

In terms of Sections 17 and 18 of the Act (OHSA 1993) the Contractor shall appoint, in writing, a health and safety representative whenever he has more than 20 employees in his employ on the works. The health and safety representative must be selected from employees who are employed in a full-time capacity at a specific workplace.

The number of health and safety representatives for a workplace shall be at least one for every 50 employees which will include the employees of subcontractors

The function of the health and safety representative(s) will be to review the effectiveness of health and safety measures, to identify potential hazards and major incidents, to examine causes of incidents (in collaboration with his employer, the Contractor), to investigate complaints by employees relating to health and safety at work, to

make representations to the employer (Contractor) or inspector on general matters affecting the health and safety of employees, to inspect the workplace, plant, machinery etc. on a regular base, but at least on a weekly basis to participate in consultations with inspectors and to attend meetings of the health and safety committee.

6.4 Health and safety committee

In terms of Sections 17,18 and 19 of the Act (OHSA 1993) the Contractor (as employer), shall establish one or more health and safety committee(s) where there are two or more health and safety representatives at a workplace. The persons selected by the employees and appointed by the Contractor to serve on the committee shall be designated in writing.

The function of the health and safety committee shall be to hold meetings at regular intervals, but at least once every three months, to review the health and safety measures on the contract, to discuss incidents related to health and safety with the Contractor's representative and any Department of Labour inspector, and to make recommendations regarding health and safety to the Contractor and to keep record of meetings, recommendations and reports made by the committee.

6.5 Competent persons

In accordance with the Construction Regulations the Contractor shall appoint, in writing, competent persons responsible for supervising construction work for the following work situations that may be expected on the site of the works, as applicable to the project.

- Risk assessment (Regulation 9);
- Fall protection (Regulation 10);
- Excavation work (Regulation 13);
- Demolition work (Regulation 14);
- Suspended platform operations (Regulation 17);
- Material Hoists (Regulation 19);
- Bulk mixing plant operations (Regulation 208);
- Explosive actuated fastening device (Regulation 21)
- Construction vehicle and mobile plant (Regulation 23);
- Use of temporary storage of flammable liquids on construction site (Regulation 25);
- Water environments (Regulation 26):
- Housekeeping on construction sites (Regulation 27)
- Stacking and storage on construction sites (Regulation 28);

- Fire precautions on construction sites (Regulation 29); and
- Construction employees' facilities (Regulation 308).

A competent person may be appointed for more than one part of the construction work with the understanding that the person must be suitably qualified and able to supervise at the same time the construction work on all the work situations for which he has been appointed.

The appointment of competent persons to supervise parts of the construction work does not relieve the Contractor from any of his responsibilities to comply with all requirements of the Construction Regulations.

7. PROJECT / SITE SPECIFIC REQUIREMENTS

A list of activities and considerations that have been identified for the project and the construction site and for which Risk Assessments, Standard Working Procedures (SWP), management and control measures and Method Statements (where necessary) have to be developed by the Principal Contractor is given in Annexure D. This list is not to be considered as inclusive and other items must be added as required.

In addition, the following health risks should be taken into account. It may become necessary to include others according to the requirements of the project.

Health risks

- Health risks arising from neighbouring as well as own activities and from the environment e.g. threats by dogs, bees, snakes, inclement weather etc.
- Exposure to noise
- Exposure to vibration
- Protection against dehydration and heat exhaustion
- Protection from wet & cold conditions
- Exposure to hazardous substances and chemicals used on site.

Emergency Procedures

The Principal Contractor shall submit a detailed Emergency Procedure for approval by the Client prior to commencement on site. The procedure shall detail the response plan including the following key elements:

- List of key competent personnel
- Details of emergency services

- Actions or steps to be taken in the event of the specific types of emergencies
- Information on hazardous material/situations.

Emergency procedure(s) shall include, but shall not be limited to, fire, spills, accidents to employees, use of hazardous substances, bomb threats, major incidents/accidents, etc. The Principal Contractor shall advise the Client, Agent, Engineer and all relevant authorities forthwith, of any emergencies, together with a record of action taken. This shall be confirmed in writing as soon as possible after the incident. A contact list of all service providers (Fire Department, Ambulance, Police, Medical and Hospital, Construction Manager, Safety Officer etc) must be maintained and available to site personnel. These procedures shall form part of the Health and Safety Plan.

First Aid Boxes and First Aid Equipment

The Principal Contractor and all Contractors shall appoint in writing First Aider(s). If not already accredited, the appointed First Aider(s) are to be sent for accredited first aid training. Valid certificates are to be kept on site. The Principal Contractor shall provide an on-site First Aid Station with first aid facilities, including first aid boxes containing, at least, the requirements of the Annexure to Section 3 of the General Safety Regulations. All Contractors with 5 or more employees shall supply their own first aid box. Contractors with 10 or more employees shall have a trained and certified First Aider on site at all times.

Personal Protective Equipment (PPE) and Clothing

The Principal Contractor shall ensure that all employees are issued with and shall wear hard hats, protective footwear and overalls as well as any other necessary PPE as set out in Section 2.3 of the General Safety Regulations. Contractors are encouraged to provide reflective vests for all their employees. The Principal Contractor and all Contractors shall make provision and keep adequate quantities of SABS approved PPE on site at all times. This shall include necessary safety gear for visitors. The Principal Contractor shall clearly outline procedures to be taken when PPE or Clothing is:

- Lost or stolen
- Worn out or damaged
- Issued to temporary employees.

The above procedure applies to Contractors and their Sub-contractors, as they are all Employers in their own right.

Occupational Health and Safety Signage

The Contractor shall provide adequate on-site OHS signage. This should include but is not limited to: ‘no unauthorised entry’, ‘report to site office’, ‘site office’, ‘beware of overhead work’, ‘hard hat area’. Signage shall

be posted up at all entrances to site as well as on site in strategic locations e.g. access routes, stairways, entrances to structures and buildings, and other potential risk areas/operations. These signs shall be in accordance with the requirements of the General Safety Regulations as amended.

8. HEALTH AND SAFETY FILE

The Contractor shall in terms of Construction Regulation 7(1)(b) maintain a Health and Safety File on site at all times. The Health and Safety File is a file or other permanent record containing information on aspects of the construction project - which will be necessary to ensure the health and safety of any person who may be affected by the construction work.

The Contractor shall appoint a suitably qualified person to prepare the Health and Safety File and to keep it up to date for the duration of the contract. The Health and Safety file shall include at least the following information:

- All Documents as required by the Act and Regulations
- All reports of inspections and audits
- All non-conformity reports
- All working drawings, calculations and design where applicable
- Detailed list of sub-contractors with contact details
- List of all hazardous materials used and stored on site with Material Safety Data Sheets
- All Hazard Identification and Risk Assessments carried out for the project.
- All Health and Safety Plans for the project.
- All safe working procedures and method statements
- Minutes of all relevant meetings
- Incident records, including investigations and results
- Record of all appointments under the Regulations

Annexure B is a list of the records to be kept on site.

The Health & Safety File shall be handed over to the Client on completion of the contract. It must contain all the documentation as set out above, or as instructed, as well as any handed to the Principle Contractor by any subcontractors together with a record of all drawings, designs, materials used and other similar information concerning the completed project.

9. RISK ASSESSMENT

Before commencement of any construction work during the construction period, the Contractor shall have a risk assessment performed and recorded in writing by a competent person. (Refer Regulation 9 of the Construction Regulations 2014).

Risk is a measure of the likelihood that the harm from a particular hazard will be realised, taking into account the possible severity of the harm. Harm to people includes death, injury (permanent or temporary), physical or mental health or any combination thereof. Risk management in health and safety includes the identification of hazards, assessing risks, taking action to eliminate or reduce the risk, monitoring the effectiveness and performing regular reviews of the entire process. The Contractor shall compile method statements to address or handle the following:

- Hazards particulars to the contract
- Identify what could go wrong and how
- Identify the likelihood of this happening
- Identify the persons or asset at risk
- Identify the extent of possible harm
- Eliminating or reducing this risk
- A monitoring plan
- A review plan

Contractors must ensure that all subcontractors conduct risk assessments for their scope of work as well. All risk assessments shall be updated and re-evaluated with any extra works or with any change to the scope of the works.

The risk assessment shall identify and evaluate the risks and hazards that may be expected during the execution of the work under the contract, and it shall include a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards identified.

The risk assessment shall be available on site for inspection by inspectors, Employer, Engineer, Health and Safety Agent, subcontractors, employees, trade unions and health and safety committee members, and must be monitored and reviewed periodically by the Contractor.

10. ARRANGEMENTS FOR MONITORING AND REVIEW

The Client and/or Agent will conduct a Monthly, or at greater frequency, Audit to audit compliance with Construction Regulation 5 (1) (o) to ensure that the Contractor has implemented and is maintaining the agreed and approved OH&S Plan. Annexure C will be used as format when conducting the audit.

The Client reserves the right to conduct other ad hoc audits and inspections as deemed necessary.

A representative of the Contractor must accompany the Client on all audits and inspections and may conduct his own audit/inspection at the same time. Each party will, however, take responsibility for the results of his own audit/inspection results.

11. MEASUREMENT AND PAYMENT

In tendering rates for these items the Contractor shall ensure that the sum of the amounts of the four items shall be based upon as well as be expressed as a percentage (i.e. 1%) of the Work Value of the Tender (Total: Schedule A).

"Item Description Unit

C1.2.5.1 Health and safety plan……..…….. Lump Sum

The full amount will be paid in one instalment only once:-

(a) The construction works permit has been issued by the Department of Labour .
(b) The Contractor has made the required initial Appointments of Employees and Sub-Contractors.
(c) The Client has approved the Contractor's Health and Safety Plan.
(d) The Contractor has set up his Health and Safety File."

"Item Unit

C1.2.5.2 Implementation of health and safety plan……... Month

The tendered rate shall represent full compensation for that part of the contractors' general obligations in terms of the Occupational Health and Safety Act and the Construction Regulations which are mainly a function of time. The sum will be paid per month only after payment for Item C1.2.5.1 has been made. This item shall also cover all updates of the files, plans and reports associated with the Occupational Health and Safety Act and the Construction Regulations."

Add the following pay items:

C1.2.5.3 Provision of full time Construction Safety Officer…….. Month

The tendered sum shall include for the cost of a SACPCMP accredited construction safety officer on a full time basis, his overheads, transport and all others items necessary for the proper carrying out of his duties. ."

C1.2.5.4 Submission of the Health and Safety File……..……Lump Sum

This amount will be paid only once the Contractor has met all his obligations in respect of the Occupational Health and Safety Act and the Construction Regulations and has submitted his Health and

Safety File complete as envisaged on this specification to the Client's satisfaction. This must be done prior to the issue of a Certificate of Completion."

SECTION 2: PROJECT SPECIFIC HEALTH AND SAFETY SPECIFICATIONS

Occupational Health and Safety Specification

In terms of Construction Regulations 2014

Client

ACSA

Description of Project Works

REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS

Project Location

CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

Date

JANUARY 2026

Table of Contents

1. INTRODUCTION AND BACKGROUND

1.1 Background to the Occupational H&S Specification

Historically, the Building or Construction Industry has had poor health and safety record. Due to the complex and potentially dangerous operations being undertaken, there is a high risk of incidents and injuries. In many instances, poor adherence to the Occupational Health and Safety Act (OHS ACT) has resulted in severe consequences for Health and Safety performance. The **Runway And Taxiway Rehabilitation At Chief Dawid Stuurman International Airport (CDSIA**) together with its client is determined that the highest health and safety standards are implemented and full commitment from all parties to achieving best practices recognised internationally.

To achieve this goal the **CDSIA** has prepared and published a Project-Specific Occupational Health and Safety Specification for the construction of **Runway And Taxiway Rehabilitation At Chief Dawid Stuurman International Airport**. The OHSS-P sets out guidelines and minimum levels of awareness and guidance for health and safety requirements for the specific project. Contractual responsibility for adhering to these requirements rests with the Principal Contractor. In particular, all employees are encouraged to be proactive in compliance. The **CDSIA** is committed to ensuring the highest health and safety standards for all work undertaken on construction sites.

1.2 Purpose of Health and Safety Specification

The purpose of the OHSS-P is to assist the Principal Contractor in achieving compliance with the OHS Act, Construction Regulations of 2014 and all relevant regulations and Standards revolving around the Contractor's scope of work and to reduce injuries in the work environment.

The OHSS-P is a performance measurement to ensure all stakeholders such as the Client, Consultants, Principal Contractors and Contractors achieve an acceptable level of OHS performance. This health and safety specification should be included in all tender documents for construction works and/or be provided to the successful bidder and this will assist the Principal Contractor with guidelines as to what the Client requires during construction.

Therefore, the Principal Contractor is at all times required to and will remain responsible for addressing all requirements of the OHS Act, Construction Regulations and all relevant Regulations and Standards in the project health and safety plan and implementation thereof.

The OHSS-P is a performance specification to ensure that the **CDSIA** and any bodies that enter into formal agreements with the CDSIA such as Consultants, Principal Contractors, and Principal

Contractors achieve an acceptable level of OHS performance. No advice, or approval of any document required by the OHSS-P such as hazard identification and risk assessment action plan or any other form of communication from the CDSIA shall be construed as an acceptance by the CDSIA of any obligation that absolves the Principal Contractor from achieving the required level of performance and compliance with legal requirements. Further, there is no acceptance of liability by the CDSIA /its client which may result from the Principal Contractor failing to comply with the OHSS-P unless the CDSIA has issued an instruction to any requirement, i.e. the Principal Contractor remains responsible for achieving the required performance levels.

Implementation of the Occupational Health and Safety Specification Programmes (OHSS-P)

This OHSS-P forms an integral part of the Contract, and Principal Contractors are required to make it an integral part of their Contracts with Sub-Principal Contractors and Suppliers. It will be disseminated by the CDSIA persons responsible for the design of the construction works, who will ensure that it is included in the Tender Document(s) issued to prospective Principal Contractors. The prospective Principal Contractors shall incorporate the requirements of the OHSS-P in their submission of tenders to the CDSIA.

2. OC*CUPATIONAL HEALTH AND SAFETY SPECIFICATION*

In terms of Construction Regulation 5(1)(b) of the OHSACT, the Client is required to compile an occupational health and safety specification for any intended project and provide such specification to prospective tenderers/bidders.

The objective of this specification is to ensure that the principal contractor entering into a contract with the Client achieves and maintains an acceptable level of occupational health and safety performance and compliance. The principal contractor's occupational health and safety management will be evaluated against this specification.

3. SCOPE

To develop a project-specific occupational health and safety specification that addresses the reasonable and foreseeable risks, exposures and aspects of occupational health and safety as affected by the abovementioned contract work.

The specification will provide the requirements that the principal contractor and other contractors will have to comply with in order to reduce the risks associated with the abovementioned contract

work which may lead to incidents causing injury and/or ill health, to a level as low as reasonably practicable and possible.

Any contractor interested in submitting a bid in response to the Client's formal tender for any construction project has to prepare and include a draft occupational health and safety plan based on this specification and the OHSACT in its tender submission. The Client will evaluate this plan as part of its formal tender adjudication processes to ensure compliance with Construction Regulation 5 which stipulates that the Client may only appoint a contractor who has the necessary competencies and resources to carry out the work appointed for safely.

4. GENERAL OCCUPATIONAL HEALTH AND SAFETY

a. Hazard identification and risk assessment (Construction Regulation 9)

Risk assessments

Annexure 5 of this specification contains a list of risk assessment headings that have been identified by the Client as possibly applicable to the abovementioned contract work. It is, by no means, exhaustive and is only offered as assistance to the contractors intending to tender for the applicable works. It therefore remains the overall responsibility of the principal contractor to consider all applicable risks and proactively undertake risk assessments and implement appropriate risk mitigation measures.

5. STRUCTURE AND RESPONSIBILITIES

Assignment of Principal Contractor's Responsible Persons to Supervise Health and Safety on Site

The Contractor shall submit the following supervisory appointments as well as any relevant appointments in writing (as stipulated by the OHSAct), before the commencement of work:

- CEO Assignee OH&S Act sect. 16(2)
- **Full-time Construction Manager CR 8.1**

The Principal Contractor shall appoint in writing and submit full-time construction manager appointments before the commencement of work. The construction manager has the duty of managing all the construction work and the duty of ensuring H&S compliance full-time on a single site. The appointed construction manager may not manage any construction site other than the site in respect to which he/she has been appointed. The Principal Contractor shall submit the CVs of the responsible persons for approval by the CDSIA/ Appointed H&S Agent before the commencement of work on site. Proof of competency is to be included with all appointments, in the form of C.V. and Certificates.

- **Full-Time Construction Health and Safety Officer CR 8.5 & 6**

  The Principal Contractor shall appoint a **Full-Time** Competent Construction Health & Safety Officer registered with **SACPCMP** (who has **3** or more years of working experience) to assist in the control of all health and safety-related aspects on site as per [CR 8(5&6]. The appointed Safety Officer shall not be allocated to oversee more than 1 district/region.

  Such appointed Safety Officer shall be at all times available and be on-site during the execution of High-Risk Activities such as those highlighted in the project programme & Risk Assessments.

- Construction work supervisor CR 8.7

  Principal Contractor must appoint construction supervisors in writing responsible for construction activities and ensuring H&S compliance on a single construction site he/she is appointed for.

- Risk Assessment Coordinator CR 9

  Principal Contractor must, before the commencement of any construction work and during such construction work, have risk assessments performed by a competent person appointed in writing.

6. OPERATIONAL CONTROL

6.1. Emergency preparedness, contingency planning and response

6.1.1 The Contractor must appoint a competent person to act as an emergency controller and/or coordinator.

6.1.2 The principal contractor must conduct an emergency identification exercise and establish what emergencies could possibly develop. He/she must then develop detailed contingency plans and emergency procedures, taking into account any emergency plan that the Client may have in place.

6.1.3 The principal contractor and the other contractors must hold regular practice drills of contingency plans and emergency procedures to test them and familiarise employees with them.

6.2 First-aid (General Safety Regulation 3)

6.2.1 The principal contractor must provide first-aid equipment and have qualified first-aider(s) on-site as required by General Safety Regulation 3 of the OHSACT.

6.3 Access scaffolding (Construction Regulation 16)

Access scaffolding must be erected, used and maintained safely in accordance with Construction Regulation 16 and SA Bureau of Standards Code of Practice, SANS 10085 entitled, “The Design, Erection, Use and Inspection of Access Scaffolding”.

Detailed consideration must be given to all scaffolding to ensure that it is properly planned to meet the working requirements, designed to carry the necessary loadings and maintained in a sound condition. It must also be ensured that there is sufficient material available to erect the scaffolding properly and safely.

Scaffolding must be erected, altered, maintained or dismantled by person(s) who has/have adequate training and experience in this type of work or under the continuous and direct supervision of such a person.

6.4 Lifting equipment (Construction Regulation 22)

Lifting equipment must be designed and constructed in accordance with the manufacturer’s/designer’s specifications as well as generally accepted technical standards and operated, used, inspected and maintained in accordance with the manufacturer's requirements as well as that of the Driven Machinery Regulation 18 of the OHSACT:

The Driven Machinery Regulation requires that:

a. Lifting equipment is to be clearly and conspicuously marked with the maximum mass load (MML) that it is designed to carry safely. When the MML varies with the conditions of use, the table of maximum loads should be used by the driver/operator;
b. Each winch on a lifting machine must at all times have, at least, three full turns of rope on the drum when the winch has been run to its lowest limit;
c. Lifting equipment be fitted with a brake or other applicable device capable of holding the MML. This brake or device must automatically prevent the downward movement of the load when the lifting power is interrupted;
d. Lifting equipment fitted with a load limiting device that automatically arrests the lift when the load reaches its highest safe position or when the mass of the load is greater than the MML;
e. Every chain or rope on a lifting machine that forms an integral part of the machine must have a factor of safety as prescribed by the manufacturer of the machine and where no standard is available the factor of safety must be:
    - chains – 4 (four)

- steel wire ropes - 5 (five)
- fibre ropes- 10 (ten)

f. Every hook or load-attaching device must be designed as such or fitted with a device that will prevent the load from slipping off or disconnecting;

g. Every lifting machine must be inspected, and load tested by a competent person every time it has been dismantled and re-erected and every 12 months after that. The load test must be in accordance with the manufacturer's prescription or to 110% of the MML in addition all ropes, chains, hooks or other attaching devices, sheaves, brakes and safety devices forming an integral part of a lifting machine must be inspected every 6 months by a competent person;

h. All maintenance, repairs, alterations and inspection results must be recorded in a log book and each lifting machine must have its log book; and

i. No person may be lifted by a lifting machine not designed for lifting persons unless in a cradle approved by an inspector of the Department of Labour.

6.5 Lifting tackle

The following requirements will apply to lifting tackle:

a. Manufactured of sound material, well-constructed and free from latent defects;

b. Clearly and conspicuously marked with an identity number;

c. Maximum mass load factor of safety:

- Natural fibre ropes - 10(ten)
- Man-made fibre ropes and woven webbing - 06(six)
- Steel wire ropes – single rope - 06(six)
- Steel wire ropes – combination slings - 08(eight)
- Mild Steel chains - 05(five)
- High tensile/alloy steel chains - 04(four)

d. Steel wire ropes must be discarded (not used any further for lifting purposes) when wear and corrosion are evident and must be examined by a competent person every three months for this purpose and the results recorded in a designated log book.

6.6 Construction vehicle and mobile plant operators

The following requirements will apply to construction vehicle and mobile plant operators:

a. Only certified and/or competent employees may be allowed to operate any construction vehicle and mobile plant.

b. Every lifting machine operator must be trained specifically for the type of lifting machine that he or she is operating.

c. Only employees duly authorised to do so may operate any construction vehicle and mobile plant.
d. Only employees physically and psychologically fit, i.e. in possession of a medical certificate of fitness, may be allowed to operate any construction vehicle and mobile plant.

6.7 Construction vehicles and mobile plant (Construction Regulation 23)

Construction vehicles and mobile plant will initially during the competency evaluation process be inspected by the Client before being allowed on a project site and suppliers of hired vehicles, plant and equipment will be required to comply with this specification as well as the OHSACT and Regulations.

Construction vehicles and mobile plant must be:

a. Of acceptable design and construction;
b. Maintained in good working order;
c. Used in accordance with their design and intention for which they were designed;
d. Operated and/or driven by trained, competent and authorised operators/drivers. No unauthorised persons to be allowed to drive construction vehicles and mobile plant;
e. Provided with safe and suitable means of access;
f. Fitted with adequate signalling devices to make movement safe including reversing;
g. Excavations and other openings must be provided with sufficient barriers to prevent construction vehicles and mobile plant from falling into the same;
h. Provided with roll-over protection;
i. Inspected daily before start-up by the driver, operator and/or user and the findings recorded in a register/log book and any defects addressed as matter of urgency;
j. Fitted with two head and two tail lights that is in good working condition whilst operating under poor visibility conditions; and
k. Used for transporting persons must have seats firmly secured and sufficient for the number of persons being transported.

No loose tools, material etcetera are allowed in the driver and/or operator's compartment/cabin nor in the compartment in which any other persons are transported.

No person may ride on construction vehicles and mobile plant except for in a safe place designed and provided for this purpose.

The construction site must be organised to facilitate the movement of construction vehicles and mobile plant in such a manner that pedestrians and other vehicles are not endangered. Traffic routes to be suitable, sufficient in number and adequately demarcated.

Construction vehicles and mobile plant left unattended after hours adjacent to roads and areas, where there is traffic movement, must be fitted with lights, reflectors or adequate barricades to prevent moving traffic from a sudden emergency or coming into contact with the parked construction vehicles and mobile plant.

In addition, construction vehicles and mobile plant left unattended after hours must be parked with all buckets, booms etc. fully lowered, the emergency brakes engaged and, where necessary, the wheels chocked, the transmission in neutral and the motor switched off and the ignition key removed and stored safely.

All construction vehicles and mobile plant daily inspection records must be kept in the occupational health and safety file.

6.8 Electrical installations (Construction Regulation 24)

Any electrical work undertaken as part of the project, including the installation of temporary electricity for construction use shall be in accordance with Construction Regulation 24 and the Electrical Installation Regulations.

The principal contractor must ensure that:

a. Existing services are to be located and marked before construction commences and during the progress thereof;
b. Where the abovementioned is not possible, employees with jackhammers etc. will be protected against electric shock by the use of suitable protective equipment e.g. rubber mats, insulated handles etcetera;
c. Electrical installations and -machinery are sufficiently robust to withstand normal working conditions on site;
d. Temporary electrical installations must be inspected at least once per week by a competent person and a record of the inspections kept on the occupational health and safety file;
e. Electrical machinery used on a construction site must be inspected daily before start-up by the competent driver/operator or any other competent person and a record of the inspections kept on the occupational health and safety file; and
f. A competent person appointed in writing must control all temporary electrical installations.

6.9 Electrical and mechanical lockout

An electrical and mechanical lockout procedure must be developed by the principal contractor and submitted to the Client for approval before construction commences. All contractors on site must be informed of and adhere to this lockout procedure.

6.10 Use and storage of flammables (Construction Regulation 25)

The principal contractor must ensure that:

a. No person is required or permitted to work in a place where there is the danger of fire or an explosion due to flammable vapours being present unless adequate precautions are taken;
b. Flammables stored on a construction site are stored in a well-ventilated, reasonably fire-resistant container, cage or room that is kept locked with consistent access control measures in place and sufficient firefighting equipment installed and fire prevention methods practised for example proper housekeeping;
c. Only one day's quantity of flammable is to be kept in the workplace;
d. Containers (including empty containers) are to be kept closed to prevent fumes/vapours from escaping and accumulating in low-lying areas; and
e. Welding and other flammable gases are to be stored and segregated according to the type of gas and empty and full cylinders.

6.11 Hazardous chemical substances

The principal contractor must ensure that:

a. Employees receive the necessary information and training to be able to use, handle and store hazardous chemical substances safely;
b. The risk assessments required in terms of Construction Regulation 9 include employee exposure to hazardous chemical substances and that the necessary measures be taken to protect persons from being detrimentally affected by hazardous chemical substances present or used in the workplace;
c. Suppliers provide the necessary information in the form of material safety data sheets regarding hazardous chemical substances required to ensure the safe use, handling and storage of these substances;
d. An up-to-date list is kept on site of hazardous chemical substances stored and used together with the material safety data sheet of the said hazardous chemical substances;

e. Hazardous chemical substances containers be clearly marked as to the contents and main hazardous category e.g. “Flammable” or “Corrosive” and the reference number of the hazardous chemical substances on the list indicated above;
f. Hazardous chemical substances for example asbestos dust should not cleared by using compressed air but should be vacuumed;
g. No person eats or drinks in an area where hazardous chemical substances are stored or utilised; and
h. Hazardous chemical substances waste is disposed of safely in terms of hazardous waste disposal requirements.

6.12 Storage of flammable and hazardous chemicals (Hazardous Chemical Substances Regulations)

6.13 Fire prevention and protection

The principal contractor must ensure that:

a. The risk of fire is avoided;
b. Sufficient and suitable storage of flammables is provided;
c. All employees are instructed in the use of the firefighting equipment and know how to attempt to extinguish a fire;
d. A sufficient number of employees are appointed and trained to act as an emergency team to deal with fires and other emergencies;
e. Employees are informed regarding emergency evacuation procedures and escape routes;
f. Emergency escape routes are kept clear at all times and clearly marked;
g. Evacuation assembly points are demarcated and made known to employees;
h. Evacuation is regularly practiced ensuring that all persons are evacuated timeously and;
i. Roll call is held after evacuation to account for all employees and to ensure that no one including visitors and disabled persons has been left behind; and
j. A clearly audible, to all persons on site, siren or alarm is fitted and regularly tested.

6.14 Housekeeping (Construction Regulation 27)

The principal contractor must ensure that:

a. Housekeeping is continuously implemented and maintained;
b. Materials and equipment are properly stored;

c. Scrap, waste and debris are removed off-site regularly;
d. Materials placed for use are placed safely and not allowed to accumulate or cause obstruction to the free flow of pedestrians and vehicular traffic;
e. Waste and debris are not to be removed by throwing from heights but by chute or crane;
f. Where practicable, construction sites are fenced off to prevent entry of unauthorised persons;
g. Catch platforms or -nets are erected over entry and exit ways or over places where persons are working to prevent them from being struck by falling objects;
h. An unimpeded work space is maintained for every employee;
i. Every workplace is kept clean, orderly and free of tools and the like that are not required for the work being done;
j. As far as is practicable, every floor, walkway, stair, passage and gangway is kept in good state of repair, skid-free and free of obstruction, waste and materials;
k. The walls and roof of every indoor workplace be sound and leak-free; and
l. Openings in floors, hatchways, stairways and open sides of floors or buildings are barricaded, fenced, boarded over or provided with protection to prevent persons from falling.

6.15 Stacking and storage (Construction Regulation 28)

The principal contractor must ensure that:

a. A competent person is appointed in writing to supervise all stacking and storage on a construction site;
b. Adequate storage areas are provided and demarcated;
c. The storage areas are kept neat and under control;
d. The base of any stack is level and capable of sustaining the weight exerted on it by the stack;
e. The items in the lower layers can support the weight exerted by the top layers;
f. Cartons and other containers that may become unstable due to wet conditions are kept dry;
g. Pallets and containers are in good condition and no material is allowed to spill out;
h. The height of any stack CDSIA should not exceed 3 times the base unless stepped back at least half the depth of a single container at least every fifth tier or the approval of an inspector of the Department of Labour has been obtained to build the stacks higher with the aid of a machine. (The operator of the machine must be protected against items falling from overhead or off the stack and no items may overhang);
i. The articles that make up a single tier are consistently of the same size, shape and mass;

j. Structures for supporting stacks are structurally sound and able to support the mass of the stack;
k. No articles are removed from the bottom of the stack first but from the top tier first;
l. Anybody climbing onto a stack can and CDSIA s do it safely and the stack is sufficiently stable to support him or her;
m. Stacks that are in danger of collapsing are broken down and restacked;
n. Stability of stacks is not threatened by vehicles or other moving plant and machinery;
o. Stacks are built in a header and stretcher fashion corners are securely bonded; and
p. Persons climbing onto stacks do not approach unguarded moving machinery or electrical installations.

6.16 Personal and other protective equipment (Sections 8, 15 and 23 of the OHSACT)

The principal contractor is required to proactively identify the hazards in the workplace and deal with them on an ongoing basis. He/she must either remove them or, where impracticable take steps to protect employees and make it possible for them to work safely and without risk to health under the hazardous conditions.

Personal protective equipment should, however, be the last resort and there should always first be an attempt to apply re-engineering and other solutions to mitigating hazardous situations before the issuing of personal protective equipment is considered.

Where it is not possible to create an absolutely safe and healthy workplace the principal contractor is required to inform employees regarding this issue, free of charge, with suitable equipment to protect them from any hazards being present and that allows them to work safely and without risk to health in the hazardous environment.

It is a further requirement that the principal contractor maintain the said equipment, that he/she instructs and trains the employees in the use of the equipment and that the prescribed equipment is used by the employee/s consistently and correctly.

Employees do not have the right to refuse to use and/or wear the equipment prescribed by the employer and, if it is impossible for an employee to use or wear prescribed protective equipment through health or any other valid reason, the employee cannot be allowed to continue working under the hazardous condition(s) for which the equipment was prescribed but an alternative solution has to be found that may include relocating the employee.

The principal contractor may not charge any fee for protective equipment prescribed by him or her but may charge for equipment under the following conditions:

- Where the employee requests additional issues in excess of what is prescribed;
- Where the employee has blatantly abused or neglected the equipment leading to early failure; and
- Where the employee has lost the equipment.

Please note: Bullet points two and three above should form part of a formal disciplinary process, i.e. following a disciplinary hearing.

6.17 Portable electrical tools and equipment (Electrical Machinery Regulation 9)

Portable electrical tools and equipment include every unit that takes electrical power from a 15-ampere plug point and is moved around for use in the workplace i.e. drills, saws, grindstones, portable lights, etcetera. In addition electrical appliances such as fridges, hotplates, heaters, etcetera must be inspected regularly but at least on a weekly basis and maintained to the same standards as portable electrical tools and appliances.

The use, inspection and maintenance of portable electrical tools and equipment must be governed by the following:

- Regular inspections by a competent person appointed in writing;
- Inspection results must be recorded in a register;
- Only competent authorised persons are allowed to use portable electrical tools and equipment; and
- The correct protective equipment is worn/used whilst operating portable electrical tools and equipment.

This equipment -

- Must be maintained in good condition at all times to prevent an electrical shock to the user;
- The main source should incorporate an earth leakage protection device or receive power through a double wound transformer or be double insulated and clearly marked as such; and
- All equipment must be fitted with a switch to allow for safe and easy starting and stopping.

6.18 Public health and safety (Section 9 of the OHSACT)

The principal contractor is responsible for ensuring that non-employees affected by the construction work are made aware of the dangers likely to arise from said construction work as well as the precautionary measures to be observed to avoid or minimise those dangers. This includes among others:

a. Non-employees entering the site for whatever reason;
b. The surrounding community; and
c. Passers-by by the site.

Appropriate signage must be posted to this effect and all employees on site must be instructed to ensure that non-employees are protected at all times.

All non-employees entering the site must receive site-applicable induction into the hazards and risks and the control measures for these.

6.19 Excavations (including piling) (Construction Regulation 13)

All excavation work, such for example the replacement of the water and sewer connections) has to comply with the following:

6.19.1 Excavation work must be carried out under the supervision of a competent person with at least two years of practical experience in excavation work who has been appointed in writing.
6.19.2 Before excavation work begins the stability of the ground must be evaluated.
6.19.3 Whilst excavation work is being performed, the principal contractor must take suitable and sufficient steps to prevent any person from being buried or trapped by a fall or dislodgement of material.
6.19.4 No person may be required or permitted to work in an excavation that has not been adequately shored or braced.
6.19.5 Where the excavation is in stable material or where the sides of the excavation are sloped back to at least the maximum angle of repose measured relative to the horizontal plane, shoring or bracing may be left out **but only after** written permission has been obtained from the appointed competent person.
6.19.6 Shoring and bracing must be designed and constructed to safely support the sides of the excavation and prevent it from collapsing.
6.19.7 Where uncertainty exists regarding the stability of the soil the opinion of a competent professional engineer or professional technologist must be obtained, before excavation

proceeds, whose opinion will be decisive. The opinion must be in writing and signed by the engineer or technologist as well as the appointed excavation supervisor.

6.19.8 No load or material may be placed near the edge of an excavation if it is likely to cause a collapse of the excavation unless suitable shoring has been installed to be able to carry the additional load. Best practice requires a one-meter clearance so as to reduce the pressure on the side walls as well as the risk of material falling onto persons inside the excavation. Neighbouring/adjoining buildings, structures or roads that may be affected or endangered by the excavation must be suitably protected.

6.19.9 Every excavation must be provided with means of access that must be within 6 metres of any employee within the excavation at any time. Should ladders be utilised for this purpose they should be duly secured.

6.19.10 The location and nature of any existing services such as water, electricity, gas, telecommunication etcetera must be established before any excavation is commenced and any service that may be affected by the excavation must be protected and made safe for employees working in or near the excavation.

6.19.11 Every excavation, including the shoring and bracing or any other method to prevent a possible collapse, must be inspected by the appointed competent person as follows:

- Daily before work commences
- After an unexpected collapse of the excavation or part thereof
- After substantial damage to any support
- After rain

6.19.12 The results of any inspections must be recorded in a register kept on site in the health and safety file.

6.19.13 Every excavation accessible to the public or that is adjacent to a public road or thoroughfare or that threatens the safety of persons, must be adequately barricaded or fenced off, on all sides, to at least one meter high and as close to the excavation perimeter as practicable. All such excavations must also be provided with warning lights or visible boundary indicators after dark or when visibility is poor.

6.20 Demolition Work

6.20.1 Demolition work must be carried out under the supervision of a competent person who has been appointed in writing.

6.20.2 A detailed structural engineering survey of the structure to be demolished must be carried out and a method statement on the procedure to be followed in demolishing the structure must be developed by a competent person, before any demolition may be commenced.

6.20.3 As demolishing progresses the structural integrity of the structure must be checked at intervals as determined in the method statement by the appointed competent person in order to prevent any premature or uncontrolled collapse.

6.20.4 Steps must be taken to ensure that where a structure is being demolished:

6.20.4.1 no floor, roof or any other part of the structure is overloaded with debris, material or equipment that would make it unsafe;

6.20.4.2 precautions are taken to prevent the collapse of the structure when any frame, support or reinforcement is cut or removed;

6.20.4.3 shoring or propping is applied where necessary;

6.20.4.4 no employee is required or allowed to work under unsupported overhanging material; and

6.20.4.5 the stability of an adjacent building, structure, road or service is maintained at all times.

6.20.5 The location and nature of any existing services such as water, electricity, gas etcetera must be established before any demolition is commenced and any service that may be affected by the demolition must be protected and made safe for employees and other persons.

6.20.6 Every stairwell in a building being demolished must be adequately illuminated.

6.20.7 Convenient and safe means of access must be provided and maintained at all times.

6.20.8 A catch platform or net must be erected over every entrance to the building or structure being demolished where the likelihood exists of material or debris falling on employees and/or persons entering and leaving and every other area where the likelihood exists of material or debris falling on employees and/or persons must be fenced or barricaded.

6.20.9 No material may be dropped on the outside of the building unless the area into which it is dropped is fenced off or barricaded.

6.20.10 Waste and debris may only be disposed from a height in a chute with the following design:

6.20.10.1 adequately constructed and rigidly fastened and secured;

6.20.10.2 inclined greater than 45 degrees and enclosed on all four sides;

6.20.10.3 fitted with a gate or control mechanism to control the flow of material that may not freefall down the chute;

6.20.10.4 discharged into a container or a barricaded area; and

6.20.10.5 demolition equipment may only be used on floors or slabs that are able to support it.

6.20.11 Asbestos-related work must be conducted according to the requirements of the Asbestos Regulations promulgated under the OHSACT and in particular Asbestos Regulation 21, i.e.:

6.20.11.1 demolition of asbestos may only be carried out by a registered (with the Department of Labour) asbestos contractor;

6.20.11.2 all asbestos materials likely to become airborne must be identified; and

6.20.11.3 a plan of work must be submitted for approval to an Approved Asbestos Inspection Authority (AAIA), which is approved by the Department of Labour, thirty calendar days prior to commencement of demolishing work unless the plan was drawn up by an AAIA and a signed (by all parties) copy is submitted to the Department of Labour fourteen calendar days before commencement of the demolishing.

6.20.12 During demolition work:

6.20.12.1 all asbestos containing material must be disposed of safely, i.e. deposited only at

a suitable site and proof of such deposits kept;

6.20.12.2 employees must be issued with appropriate personal protective equipment and the proper use thereof enforced at all times; and

6.20.12.3 after the demolition has been completed the area/premises must be thoroughly checked to ensure that all asbestos waste has been removed.

6.20.13 No employee is allowed to:

6.20.13.1 use compressed air or permit the use of compressed air to remove asbestos dust from any surface or employee or person;

6.20.13.2 smoke, eat, drink or keep food or beverages in an area not specifically designated for this; and

6.20.13.3 apply asbestos by spraying.

6.21 Welding, flame cutting or similar operations

Should any welding work be undertaken as part of emergency repairs to plant and equipment on-site or as part of the construction activities, the principal contractor must ensure that:

6.21.1 A competent person will be appointed to supervise welding, flame cutting or similar operations on site.

6.21.2 The following rules will govern all welding and flame-cutting or similar operations:

6.21.2.1 The welder will be trained regarding the safe use/operation of the equipment.

6.21.2.1.1 The welder and his assistant will be provided with effective and appropriate personal protective equipment and/or clothing.

6.21.2.2 Cables and electrode holders will be effectively insulated.

6.21.2.3 The workplace will be effectively screened off to prevent bystanders from being affected by the welding rays or they will be provided with personal protective equipment.

6.21.2.4 Special precautions will be taken where welding is undertaken in confined spaces e.g. proper and sufficient ventilation will be provided.

6.21.2.5 In wet or damp conditions, the welding equipment and the welder will be properly insulated and someone will be on standby to assist in the event of any emergency.

6.21.2.6 A qualified person will certify in writing that it is safe to enter and work in a specific confined space before welding or flame cutting is undertaken.

6.21.2.7 No welding, flame cutting, grinding, soldering or similar work shall be undertaken in respect of any drum, vessels or similar object or container where such object or container-

6.21.2.7.1 is completely closed, unless the rise in internal pressure cannot render it dangerous; or

6.21.2.7.2 contains any substance which, under the action of heat may explode or react to form dangerous or poisonous substances.

6.21.2.8 Where pressure vessels/welding cylinders containing oxygen or acetylene are transported or used, the proper precautionary measures will be taken against bumping, falling, rolling etcetera.

6.21.2.9 Gas welding hoses may only be joined with approved connectors and clamps.

6.21.2.10 No oil or grease may be applied to oxygen valves and fittings.

6.21.2.11 It is a sound practice to store pressure vessels and/or welding cylinders vertically and to secure them by means of a chain.

6.21.2.12 Acetylene cylinders may never be inclined in excess of 45º.

6.21.2.13 Proper and adequate fire prevention measures will be instituted and maintained for as long as the welding continues.

6.21.2.14 Where explosive and/or flammable vapours are present welding will only be done under “hot work” permits.

6.22 Transportation of employees

6.22.1 6.22.1 Any vehicle used to transport employees must have seats firmly secured and adequate for the number of employees to be carried.

6.22.2 Regulation 247 of the National Road Traffic Act, Number 93 of 1996 (NRTA) stipulates that the principal contractor shall not allow employees to be transported in a vehicle unless the portion of the vehicle in which the employees are being conveyed is enclosed to a height of –

6.22.2.1 at least 350 mm above the surface on which employees are seated; or

6.22.2.2 at least 900 mm above the surface on which employees are standing, in a manner and with a material of sufficient strength to prevent employees from falling from such a vehicle when it is in motion.

6.22.3 Regulation 247 of the NRTA also stipulates that the principal contractor shall also not allow any employees to be conveyed in the goods compartment of a vehicle together with any tools or goods, except their personal effects, unless that portion in which the employees are being conveyed is separated by means of a partition, from the portion in which such goods are being conveyed.

6.23 Demarcation

The construction site shall be barricaded completely to prevent airport staff and vehicles from entering the construction area.

Protection around the site must be in the form of a physical barrier and appropriate signage, to prevent the public from entering the area.

It is advised to use a 1.2m high DAY-GLO Mesh (barrier netting) to prevent pedestrians from entering the specific construction area.

(Construction Regulation 13)

Excavation procedures for earthworks and the installation of services must be conducted according to the South African National Standards standardized classification for excavations (SANS 1200D, DA and DB).

An excavation could be a hole or trench of any size and shape.

A Risk Assessment must be done before making an excavation.

The following must be taken into consideration when doing the Risk Assessment:

- Depth of the excavation
- Length of the excavation
- Existing services
- Barricading and demarcation
- Depth of the excavation

Should an excavation be more than chest deep (1.2m), it must be adequately shored or braced.

Slopes or trenches shall be as flat as possible, 1 x vertical to 2 x horizontal must be considered maximum for dry conditions. In wet conditions either a much lower slope shall be used, or if space is a constraint, shoring and de-watering shall be applied.

A competent person shall be appointed to supervise excavation work. Stability evaluation of the ground must be done and a certificate shall be issued.

A plan for the prevention of persons being trapped due to collapse shall be provided by the Contractor.

The design of shoring shall be documented by the Contractor in the Health and Safety file as provided by the competent designer of shoring.

The maximum loading of sides of an excavation must be documented in a usable format If adjacent structures and buildings are present and can be affected a design and construction of supporting details shall be represented.

Provision shall be made for access routes to the excavation. Routes must not be more than 6 meters away from the worker.

The contractor must establish all existing services in the area of excavations. The plan of existing services shall be documented in the Health and Safety file. Existing services include Telkom, Gas, Water, Electricity Supplies and other similar services.

Excavation Inspection shall be done on a

1. prior to each shift
2. after every blasting operation
3. after an unexpected fall off the ground
4. after substantial damage to supports
5. after rain

6. daily basis

6.24 Working in inclement weather

The principal contractor shall implement an early warning system to identify inclement weather and to prevent such weather from posing negative implications on the safety of employees and other persons visiting.

The early warning system shall as a minimum provide for the following:

6.23.1 Construction work is done during electrical storms.

6.23.1.1 The principal contractor shall ensure that all employees are removed from heights and all employees are as safe as possible, in inclement weather conditions.

6.23.1.2 No work is allowed on the construction site during electric storms where employees cannot be protected from it. Protection involves:

6.23.1.2.1.1 eating area fitted with a lightning mast

6.23.1.2.1.2 workshops

6.23.1.2.1.3 inside buildings

6.23.1.3 No work is allowed in electrical storms on top of open structural steel, even when earthed.

6.23.1.4 No work is allowed on heights where the lightning is within a 10-kilometre radius.

6.23.1.5 After inclement weather, on-site risk assessments will be reviewed to include wet conditions.

6.25 Construction work done during rain

6.25.1 During rainy conditions, all work on steel structures will stop.

6.25.2 No electrical tools will be used during rainy weather in open areas.

6.25.3 Work can be done in waterproof areas where there is a zero risk of electrocution.

6.25.4 Areas will be cleared for work during rain:

6.25.4.1 Workshops

6.25.4.2 Offices

6.25.4.3 work on ground level with the provision that the area is maintained in a safe dry condition

6.26 Scaffolding activities during inclement weather conditions

During inclement weather, only limited scaffolding actions will be permitted i.e. erecting and dismantling activities.

Guidelines for safe choices:

Weather type	Building and dismantling of scaffolding
Lightning	Stop all activities
Light rain	Stop all activities
Heavy rain	Stop all activities

Weather type	Building and dismantling of scaffolding
Wind <28 km/h	Full use
Wind >40 km/h	Stop all activities
Light mist	Full use
Heavy mist	Full use
Hail	Stop all activities

All scaffold users will:

6.26.1 Ensure that scaffolding is inspected immediately after inclement weather conditions.

6.26.2 Ensure that the risks associated with working at heights during inclement weather are identified and reasonably mitigated.

6.26.3 Be cautious of slip/trip hazards when performing activities during inclement weather.

6.26.4 Take note of the weather when completing the daily safe task instructions on site, where applicable.

6.27 Driving in inclement weather

The principal contractor shall ensure that the danger of driving in wet conditions is adequately covered in a risk assessment.

The risk assessment will include, but not limited to:

6.26.5 route planning

6.26.6 speed reduction

6.26.7 planning for emergencies

6.26.8 driving precautions for slippery surfaces

6.26.9 visibility hazards

7. TRAFFIC ACCOMMODATION

Traffic on site will be kept to a minimum. Only vehicles with specific permits will be allowed on site. The speed limit is 40 Km/h in normal circumstances unless otherwise specified. Management and the

Construction HSE Practitioners will have the authority to remove violators of traffic regulations from the site. Continuous non-compliance by Subcontractors/individuals will lead to the retraction of their vehicle license and removal off-site.

The contractor shall ensure that an appropriate and sufficient number of road signs and flagmen are in place.

The contractor shall ensure all pupils and teachers are fully informed about activities on site and dangers associated with construction activities.

The contractor shall carry out a detailed risk assessment to ensure that all traffic-related risks are identified, and appropriate risk mitigation measures be established, implemented, and maintained.

The contractor shall develop a complete traffic accommodation plan to provide for traffic entering the site as well as traffic on site, i.e. alternative gates should be in place at school in order to avoid congestion with pupils and teachers.

8. FINAL BASELINE RISK ASSESSMENT

The baseline risk assessment follows:

ROMH	OCCUPATIONAL H & S MANAGEMENT SYSTEM	CSM - REV:00
	RISK ASSESSMENT - WORKING IN LIVE AIRPORT RUNWAY	***CSM- RA -01***

RISK RATING		CONSE-QUENCES	PROBIBILITY						
15-25 EXTREME	**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible	**DATE:**	31 MAY 2025
8 - 14 HIGH	**H = HEALTH**							**LOCATION**	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
4 – 7 MEDIUM	**E = ENVIRONMENT**							**SCOPE OF WORK**	WORKING IN LIVE AIRPORT RUNWAY
1 - 3 LOW	**Q=QUALITY**		5	4	3	2	1		
S FATAL **H** FATAL **E** Major impact (Long term)		5	25	20	15	10	5	**ASSESSMENT TEAM**	RISK ASSESSOR: SITE SUPERVISOR: CONSTRUCTION MANAGER: SHE REP:
S Serious injury (Reportable) **H** Permanent none Lethal effect **E** High impact		4	20	16	12	8	4	**SIGNATURE:** **SUPERVISOR**	
S Loss Time Injury (Less than 14 Days) **H** Reversible severe effect **E** High impact (6 Months)		3	15	12	9	6	3	**CLIENT**	

S **H** **E**	Minor Injury (First Aid) No effect No effect	1	5	4	3	2	1	**DATE ACCEPTED**	MAY 2025

	TASK OR ACTIVITY	HAZARDS (POTENTIAL DANGER)	POSSIBLE CONSEQUENCE LIKELY TO HAPPEN (HARM)	RISK ANALYSIS				EXISTING & PROPOSED CONTROL MEASURES	RESIDUAL RISK	ACTION ASSIGNED TO (Responsible)
				S H E Q	Consequence	Likelihood	Risk Rating			
1	**Arrival and working on live airport runway and inspection of the Runway**	Unfamiliar with the site-specific safety regulations	Physical Multiple Injuries	SH	4	4	16	• All employees working at the airport will undergo site-specific inductions before executing work on-site and will adhere to site-specific safety regulations. • Site SHE Officer will ensure that all employees reporting on-site/ project have undergone site-specific inductions and familiarize themselves with site safety regulations.	2	Construction health and safety Officer
		People with medical conditions	Fatalities, self-injuries, disease spread to other workers	SH	5	3	15	• All employees working at the Airport will undergo Medical Examination by a Registered OHP and Medical Fitness Certificates will be attached with Annexure 3 before executing work on site.		Construction health and safety Officer
		Incompetent personnel	Fatalities, self-injuries, Property damage					• Ensure that all persons performing work at the airport runway are competent		

		Man-machine interface- and moving **airport bus, or airport shuttle bus**	Physical Multiple Injuries	SH	5	3	15	• All employees must undergo the site or project induction and visitor induction. • All employees will walk on-site designated safe walkways when at the airport. • A competent flagman must be appointed to control pedestrians and traffic movement on the airport site.	6	Construction health and safety Officer and Construction Supervisor
		Interaction with other airport's runway activities	Physical Multiple Injuries	SH	3	4	12	• All employees entering the airport construction site will be notified of other airport activities and restricted areas will be communicated to all employees. • Employees will not be allowed to roam around the runway except for designated working areas.	1	Construction health and safety Officer and Construction Supervisor
		Incorrect or inadequate PPE on a live airport runway - construction Site	Physical Multiple Injuries	SH	3	4	12	• All employees working on the airport runway will be provided with appropriate adequate PPE free of charge before commencing work on the construction site. • All persons will wear reflective clothing at all times.	1	Construction health and safety Officer and Construction Supervisor
		Walking on uneven surfaces/ unauthorized / runway areas	Physical Multiple Injuries	SH	3	4	12	• All employees on the Construction Site must be alert, and focused and watch their steps at all times. • A work permit must be in place to allow employees to perform work in designated areas.	2	Construction health and safety Officer and Construction Supervisor
		Unauthorized entry on-site or entering restricted areas	Self-injuries, disease spread to other workers	SH	4	4	16	• Security measures must be in place and adequate safety signage and machine guarding to warn the public of the immediate hazards • Employees must undergo airport inductions and be aware of all restricted areas	2	Construction health and safety Officer and Construction Supervisor

4	**Offloading Working Tools and equipment from vehicles at the working area – runway**	Struck by falling another Objects / falling container	Physical Multiple Injuries Loss of life.	SH	4	4	16	• Inspect the load to be offloaded before work commences for any tears and record them in a log sheet • Check weight rating. Note equipment maximum weight and ensure seek assistance when offloading heavy material/equipment • Ensure pre-task assessment is conducted before any loading activity commences	2	Construction Supervisor
		Stored Energy	Physical Multiple Injuries	S	2	3	12	• Employees must ensure the load is properly tightened at all times and loads are safely secured to avoid accidental falling. • All employees are to stand a safe distance from the truck.	2	Construction Supervisor
		Incompetent Operator or Medically unfit Operator	Physical Multiple Injuries Property Damage	SH	4	4	16	• Ensure the truck operator is competent, appointed and certified to perform work/operations. Construction Regulation 23 (1)(d) • All operators operating mobile plant/vehicles must have a medical certificate in the form of Annexure 3 attached to the competency certificate.	1	Construction Supervisor
5	**Offloading of Material** **(Manual Material Handling)**	Sharp, rough edges or too heavy objects Accidental dropping of object - Hand injuries (laceration, contusions) Foot injuries	Hand injuries (laceration, contusions) Foot injuries	SH	5	3	15	• Use the correct lifting technique (Bend knees not back) • Good communication and organisation when working together • Do Hazard identification before handling	1	Construction Supervisor
		Accidental dropping of an object	Foot injuries (fractures, contusions) Eye injuries	S	3	4	12	• Good communication and organisation when working together • Always release material when the other person has a good grip on the material passed communicate at all times • Adhere to correct manual lifting or handling procedures and the supervisor to be visible at all times	1	Construction Supervisor

		Incorrect posture during offloading / Bending and twisting	Physical Multiple Injuries	S	3	4	12	• Employees to avoid unnecessary bending and twisting • Employees to adhere to manual handling technique	1	Construction Supervisor
		Inadequate communication	Physical Multiple Injuries	SH	5	3	15	• Communicate when offloading material from the trucks • Supervision to be visible and constant at all times during manual offloading of building and office equipment	1	Construction Supervisor
		Lack of Supervision	Physical Multiple Injuries	SH	5	3	15	• Legally appointed supervisor must be present at all times • Supervisor must communicate to all employees at all times	1	Construction Supervisor
6	**Storage Of Equipment**	Inadequate stacking and storage area	Physical Multiple Injuries	SH	5	3	15	• Supervisor to ensure adequate stacking and storage area is allocated for the storage of all project materials and equipment • The supervisor will ensure that sufficient barricade is erected around the stacking and storage yard	1	Construction Supervisor
		Unsafe storage of material	Physical Multiple Injuries	SHE	3	4	12	• Building Materials must be separated and safely stored • A stacking and Storage supervisor must be appointed. Construction Regulation 28	1	Construction Supervisor
		Unstable stacks or high stacks	Physical Multiple Injuries Property damage	SHE	3	4	12	• Stacks must not be 3 times higher than the dimensions of the material	1	Construction Supervisor
7	**Provision Of Facilities**	Unavailability of potable clean drinking water	Ill health of employees Diarrhoea	SHE	3	4	12	• Ensure proper installation of potable (drinkable) water lines or sufficient containers with water availability	1	Construction health and safety Officer and Construction Supervisor

		Inadequate Sanitation facilities available	Physical Multiple Injuries	H	3	4	12	• Sufficient Toilets to be Provided comply with Construction Regulation 30 • The construction supervisor will ensure that ablution Facilities will be cleaned regularly and that soap and toilet paper are always available	1	Construction Supervisor
8	**Housekeeping**	Slip, trip and fall	Physical Multiple Injuries	S	3	3	9	• Employees to be alert and focused, and watch their footing at all times. • Watch out for uneven surfaces and ensure safe walkways are used all the time when walking on the construction site	1	Construction Supervisor
		Inadequate waste disposal skips or dust bins	Physical Multiple Injuries	SH	3	4	12	• Adequate waste dust bins will be distributed around the construction site and employees will be trained on waste separation	1	Construction Supervisor
		Incorrect waste disposal	Environmental impact	SH	3	4	12	• Waste must be disposed of in the relevant waste streams and such dust bins must be visibly labelled or colour-coded to encourage proper waste separation	1	Construction Supervisor

RISK RATING		**CONSE-**	**PROBIBILITY**					**DATE:**	MAY 2025
15-25 EXTREME	**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible	**LOCATION**	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

8 - 14 HIGH	**H = HEALTH**							**SCOPE OF WORK**	GRASS CUTTING AT RUNWAY - VEGETATION CONTROL
4 – 7 MEDIUM	**E = ENVIRONMENT**		5	4	3	2	1		
1 - 3 LOW	**Q=QUALITY**								
S FATAL **H** FATAL **E** Major impact (Long term)		5	25	20	15	10	5	**ASSESSMENT TEAM**	RISK ASSESSOR: SITE SUPERVISOR: CONSTRUCTION MANAGER: SHE REP:
S Serious injury (Reportable) **H** Permanent none Lethal effect **E** High impact		4	20	16	12	8	4	**SIGNATURE: SUPERVISOR**	
S Loss Time Injury (Less than 14 Days) **H** Reversible severe effect **E** High impact (6 Months)		3	15	12	9	6	3	**CLIENT**	
S Minor Injury (First Aid) **H** No effect **E** No effect		1	5	4	3	2	1	**DATE ACCEPTED**	MAY 2025

	TASK OR ACTIVITY	HAZARDS (POTENTIAL DANGER)	POSSIBLE CONSEQUENCE LIKELY TO HAPPEN (HARM)	RISK ANALYSIS				EXISTING & PROPOSED CONTROL MEASURES	RESIDUAL RISK	ACTION ASSIGNED TO (Responsible)
				SHEQ	Consequence	Likelihood	Risk Rating			
1	**INSPECTION OF HAND TOOLS AND BRUSH CUTTERS**	• Defective tools •	Defective tools could cause physical injuries. Could affect production Contamination of land.	S	3	4	12	• All hand tools must be checked before work starts. • Checklists for tools and grass cutters must be in place • All tools used must be numbered for inspection reasons	2	Construction Supervisor
		• Petrol and oil spillages from brush cutters •						• A spillage kit must be on site to protect land from ground pollution.		
		• not using the right tools	multiple physical injuries could cause hand amputation.	S H	3	4	12	• Always use the right tools designed for the task. Tools safe working procedure to be communicated before starting work. Handling of hand tools must be communicated.	2	Construction Supervisor
		Mushroom developed on tools, rust accumulation on tools	Tools could be broken while working and cause injury.	S H	3	4	12	• Tools should be cleaned after use. • Every Friday tools must be serviced for good maintenance purposes. Inspection of tools daily before use.	2	Construction Supervisor
2	**TRAFFIC ACCOMMODATION**	Failure to inspect traffic signs.	Traffic signs could fall on moving traffic and cause property damage	S	3	3	9	• All traffic signs must be inspected. • Checklists and registers for traffic signs must be in place. • Defective traffic signs are to be removed on-site immediately.	2	Construction Supervisor

		Faded traffic signs	Could cause physical injuries to employees	S	3	3	9	• Traffic signs must be visible enough for motorists and the public. • A trained flagman is needed in place to control smooth movement,	2	Construction Supervisor
		Excessive noise above 85Dbs.	Loss of hearing	S H	3	4	12	• Noise suppression methods are to be implemented and communicated to all employees. •	2	Construction Supervisor
		Failure to position traffic signs strategically- compliance with **SARTSM Vol 3**	Multiple Physical Injuries	S H E	4	4	16	• All traffic signs are to be positioned strategically. • All employees are to be inducted on how to implement traffic accommodation.	3	Construction Supervisor
		Speed limits not in place to control speeding traffic	Employees could be bumped by moving traffic Fatality.	S H E	4	4	16	• Speed limits must be put to alert traffic of the construction happening ahead. • Work ahead man signs to be in place for traffic to minimize speed	33	Construction Supervisor
10	**REFUELING AND STORAGE OF HCS**	Inhalation of petrol fumes.	Could cause lung diseases	S H E	4	4	16	• MSDs are to be communicated to employees before resorting to any chemical substances. • Chemicals are to be used according to manufacturer instructions.	3	Construction Supervisor
		Chemical containers are not labelled.	Could cause employees' death by swallowing	S H	3	4	12	• All chemicals on site must be labelled for employees to easily identify. •	2	Construction Supervisor
11	**GRASS CUTTING**	Flying objects	Multiple physical injuries Eye injuries	S H	3	4	12	• Face shields must be worn at all times when doing grass cutting. • Aprons must be worn to protect the body when grass cutting. • DSTIS must be conducted and done comprehensively to identify potential injuries.	2	Construction Supervisor
		Exposed to excessive noise above 85 Dbs.	Hearing loss Eardrum damage	S H E	4	4	16	• Ear Muffs or earplugs are to be worn at all times. • Noise suppression methods need to be communicated to employees.	2	Construction Supervisor

		Exposed to thermal stress	Could cause dizziness, Nausea, and Skin cancer.	S H	3	4	12	• Employees drink a lot of water. • Wear sun hats • Wear long-sleeved PPE. • Must rest under shade to control fatigue	1	Construction Supervisor
		Machine vibration	Could cause kidney failure. Ergonomics	S H	3	4	12	• Employees to be inducted on the effects of ergonomics. • Wear grass grass-cutting harness at all times. • Drink a lot of water.	1	Construction Supervisor
		Excessive inhalation of dust fumes	Could irritate the lungs Eye irritation	S H	3	4	12	• Respirators or dust masks must be worn at all times. • Employees to encouraged to conduct daily safety instruction	1	Construction Supervisor
	USE OF GRASS CUTTING MACHINE.	Damaged grass-cutting machine	Serious injuries, property damage and production loss	S H E	4	4	16	• Pre-start inspection on grass cutting machine to be done prior to work commencing, JSA to be communicated with all employees.		Construction Supervisor
		Repetitive movements (e.g., Mowing, trimming).	Musculoskeletal injuries.	S H	3	4	12	• Provide training on proper lifting techniques and use of equipment. Rotate tasks to prevent overexertion.		Construction Supervisor
		Made contact with moving parts of machinery.	Operators could suffer cuts, and crush injuries.	S H E	4	4	16	• Ensure all operators are trained in the safe operation of machinery. Keep hands and feet away from moving parts.		Construction Supervisor
		Uneven ground, wet grass or debris	Slips, trips and falls.	S H	3	4	12	• Inspect the area before starting work. Wear appropriate footwear with slip-resistant soles. Avoid working in slippery conditions.		Construction Supervisor
		Working close to edges and embankments.	Entanglement in vegetation or equipment.	S H	3	4	12	• Keep hands and clothing away from moving parts. Maintain a safe distance from edges and embankments.		Construction Supervisor
		Exposure to pesticides or herbicides used on grass.	Multiple physical injuries Skin rashes/irritation	S H	3	4	12	• Provide training on chemical handling and use. Use appropriate personnel protective equipment such as gloves and masks.		Construction Supervisor

		Working in inclement weather	Struck by lightning Heat stress Cold stress	S H E	4	4	16	• Monitor weather forecasts and reschedule work if forecast. Provide shade rest areas and adequate hydration.		Construction Supervisor
		Exposure to allergens	Pollen, insect bites	S H	3	4	12	• Provide workers with insect repellent, and monitor workers for signs of allergic reactions.		Construction Supervisor
		Working long hours or tight deadlines	Stress and fatigue	S H	4	4	16	• Implement regular breaks and rotate tasks to prevent monotony. Encourage open communication and support among team members.		Construction Supervisor
		Contact with overhead power lines or buried cables.	Electrocution Fatality	S H E	4	4	16	• Identify and mark underground utilities. Maintain a safe distance from power lines and use non-conductive tools.		Construction Supervisor
		Petrol spillage while refuelling	Ground pollution	S H E	4	4	16	• Drip trays to be used when refuelling grass-cutting machinery.		Construction Supervisor
		Smoking while refuelling.	Machinery can catch fire. Veld fire	S H E	4	4	16	• Strictly no smoking allowed while refuelling the machinery. • Naked flames are not allowed around flammable liquids/ chemicals.		Construction Supervisor
	RAKING GRASS / PACKAGING FOR DISPOSAL	Exposure to Snakes, insects or reptiles	Multiple physical injuries Eye injuries	S H E	4	4	16	• All employees on site must stay alert at all times and look out for snakes, insects and reptiles. • Employees always to be careful when racking. • Snake revision awareness must be conducted to alert employees of procedures to take when a snake bite occurs	2	Construction Supervisor
		Broken glass	Multiple physical injuries Eye injuries	S H	3	4	12	• All employees will be issued with adequate PPE to perform work at all times • Be alert and focused at all times, employees to look out for potential hazards at the workplace • Employees must wear hand protection at all times	1	Construction Supervisor

		Inhalation of dust fumes	Chest pains Lung infections	S H E	4	4	16	• Supervisors must ensure that dust suppression methods are used to suppress excessive dust on site • All employees working in a dust environment will be issued with Dust masks to wear • Wear correct PPE at all times, employees must use PPE correctly	2	Construction Supervisor
12	**VEGETATION CONTROL - Herbicide application**	Incorrect PPE when handling Herbicide	Skin irritation	S	3	3	9	• All employees will be issued with adequate PPE to perform work • Ensure the PPE register is completed upon the PPE issue • Correct PPE will be used at all times when utilizing herbicides	1	Construction Supervisor
		NO Safety data sheet for the Herbicide	Multiple physical injuries	S H	3	4	12	• Ensure material safety data sheet for all chemicals used on site is communicated to all employees at the point of use	11	Construction Supervisor
		Incorrect storage of Herbicide	Pollution/ground pollution	S H	3	4	12	• All Herbicide Will Be Kept at Designated Areas	1	Construction Supervisor
		Exposure to the Herbicide		S H	3	4	12	• All employees will be issued with adequate pep when handling chemicals	1	Construction Supervisor

ROMH	OCCUPATIONAL H & S MANAGEMENT SYSTEM	CSM - REV:
	RISK ASSESSMENT - ELECTRICAL WORKS	***CSM- RA-3***

RISK RATING			CONSE-QUENCES	PROBIBILITY						
15-25 EXTREME		**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible	**DATE:**	MAY 2025
8 - 14 HIGH		**H = HEALTH**							**LOCATION**	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
4 – 7 MEDIUM		**E = ENVIRONMENT**							**SCOPE OF WORK**	ELECTRICAL WORKS - RE-CABLING ELECTRICAL WIRE AND LIGHT INSTALLATIONS
1 - 3 LOW		**Q=QUALITY**		5	4	3	2	1		
S	FATAL		5	25	20	15	10	5	**ASSESSMENT TEAM**	RISK ASSESSOR SITE SUPERVISOR PROJECT ENGINEER
H	FATAL									
E	Major impact (Long term)									
S	Serious injury (Reportable)		4	20	16	12	8	4	**SIGNATURE: SUPERVISOR**	
H	Permanent none Lethal effect									
E	High impact									
S	Loss Time Injury (Less than 14 Days)		3	15	12	9	6	3	**REV / DATE**	REVISION 00
H	Reversible severe effect									
E	High impact (6 Months)									
S	Injury needs Medical Assistance		2	10	8	6	4	2	**CLIENT**	
H	Reversible Minor effect									
E	Slight impact (1 Month)									
S	Minor Injury (First Aid)		1	5	4	3	2	1	**DATE ACCEPTED**	MAY 2025
H	No effect									
E	No effect									

	TASK OR ACTIVITY	HAZARDS (POTENTIAL DANGER)	POSSIBLE CONSEQUENCE LIKELY TO HAPPEN (HARM)	RISK ANALYSIS				EXISTING & PROPOSED CONTROL MEASURES	RESIDUAL RISK	ACTION ASSIGNED TO
				SH EQ	Consequence	Likelihood	Risk Rating			
1	**Site Preparation:** Ensure that the work area is clear of any obstructions isolate power sources and ensure proper lockout/tag-out procedures are in place.	Poor housekeeping at the workplace – Obstructions	• Hand injuries (laceration, contusions) by cutting	S	4	2	8	▪ Ensure the work area is clear and proper stacking and storage ▪ Housekeeping will be maintained at all time	1	Construction Supervisor
		Failure to isolate power	• Electrocution • Electrical shock • Hand or eye injuries	SH	4	4	16	▪ The supervisor and technician will ensure that all energy sources will be isolated. ▪ Lockout / tag-out procedures will be followed ▪ No work will be done on live wires ▪ Wear correct PPE – Gloves and Safety Glasses. ▪ Awareness through daily toolbox talks. ▪ SWP,s	2	Construction Supervisor
2	**Inspection and testing:** Verify that all components are free from damage and conduct insulation resistance and continuity tests as per specifications. Perform visual inspections for any signs of wear, damage, or incorrect installation.	Inadequate inspections	• Fire • Property damage	SH	4	4	16	▪ Supervisors must ensure proper visual inspections are done and Risk Assessments are communicated ▪ Any signs of damage/wear or correct installations will be immediately reported to the responsible persons	2	Construction Supervisor

		Failure to conduct insulation resistance and continuity tests as per specifications.	• Electrocution • Electrical shock • Hand or eye injuries	SH	4	4	16	▪ The supervisor and technician will ensure that all energy sources are isolated. ▪ Lockout / tag-out procedures will be followed ▪ No work will be done on live wires ▪ Wear correct PPE – Gloves and Safety Glasses. ▪ Awareness through daily toolbox talks. ▪ SWPs	2	Construction Supervisor
3	**Installation:** Install distribution boards in accordance with specifications and standards under SANS 10142. Securely mount circuit breakers and other components and connect wiring and cables as per the approved layout. Ensure proper torquing of connections to manufacturer specifications.	Circuit breakers not securely mounted	• Electrocution • Electrical shock • Hand or eye injuries	SH	4	4	16	▪ The supervisor and technician will ensure that all energy sources will be isolated. ▪ Lock-out / tag-out procedures will be followed ▪ No work will be done on live wires ▪ Wear correct PPE – Gloves and Safety Glasses. ▪ Awareness through daily toolbox talks. ▪ SWPs	3	Construction Supervisor

		Inadequate torquing of connections	• Fire • Property damage • Electrical shock • Hand or eye injuries	SH	4	4	16	▪ The supervisor and technician will ensure that all energy sources will be isolated. ▪ Lockout / tag-out procedures will be followed ▪ No work will be done on live wires ▪ Wear correct PPE – Gloves and Safety Glasses. ▪ Awareness through daily toolbox talks. ▪ SWPs	5	Construction Supervisor
3	**Labelling and Identification:** Clearly label each circuit and component for easy identification and use standard electrical symbols and markings. Provide a comprehensive legend for reference.	Incorrect labelling of circuit components	• Fire • Serious injuries	SH	4	4	16	▪ live wires ▪ Wear correct PPE – Gloves and Safety Glasses. ▪ Awareness through daily toolbox talks. ▪ The supervisor and technician will ensure that all energy sources will be isolated. ▪ Lock-out / tag-out procedures will be followed ▪ No work will be done on live wires	3	Construction Supervisor
4	**Commissioning:** Gradually energize the system and monitor for any abnormal behaviour and conduct functional tests for each circuit, verify that all protective devices operate correctly.	Incorrect connections or loose electrical connections	• Serious injury	S	4	2	8	▪ All electrical works on site will be conducted by an appointed competent technician. ▪ The right tool for the job	4	Construction Supervisor

		Incompetent technician	• Serious injuries • Electrocution	S	5	4	20	• All electrical works on site will be conducted by an appointed competent technician • Supervision will be available at all times • Hazard awareness instruction during the toolbox talk • Technicians / Electricians to be trained, licensed	4	Constructi on Supervisor

ROMH

OCCUPATIONAL H & S MANAGEMENT SYSTEM

RISK ASSESSMENT – MILLING ASPHALT | *CSM-RA- 04*

RISK RATING		CONSE-QUENCES	PROBIBILITY					**DATE:**	31 MAY 2025
15-25 EXTREME	**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible	**LOCATION**	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
8 - 14 HIGH	**H = HEALTH**							**SCOPE OF WORK**	MILLING ASPHALT
4 – 7 MEDIUM	**E = ENVIRONMENT**		5	4	3	2	1		
1 - 3 LOW	**Q=QUALITY**							**ASSESSMENT TEAM**	SHE REP SAFETY OFFICER CONSTRUCTION SUPERVISOR
S FATAL **H** FATAL **E** Major impact (Long term)		5	25	20	15	10	5		

S **H** **E**	Serious injury (Reportable) Permanent none Lethal effect High impact	4	20	16	12	8	4	**Director Signature**	
S **H** **E**	Loss Time Injury (Less than 14 Days) Reversible severe effect High impact (6 Months)	3	15	12	9	6	3	**Rev / Date**	REVISION 00
S **H** **E**	Injury needs Medical Assistance Reversible Minor effect Slight impact (1 Month)	2	10	8	6	4	2	**CLIENT**	
S **H** **E**	Minor Injury (First Aid) No effect No effect	1	5	4	3	2	1		

	STEP IN PROCESS	**HAZARDS IN CARRYING OUT THIS STEP**	**RISK (HARM)**	RISK ANALYSES				**STEP IN PROCESS**	**Legal Reference**	**REMAINING**
				SHEQ	**Consequen**	**Likelihood**	**Risk Rating**			
1	Preparation of activities before commencing work	Vehicle Accidents	Injury to people or damage to equipment material or property	S	3	4	12	• All Driver must be trained and certified • Driver must drive at an acceptable speed • Be alert and warn people when to close • Make use of a spotter when working close to people. • Create awareness in the daily safety briefing.	DMR (18)	3
		Fall Over	Injury to the driver or people Damage to property or material	S	4	4	16	• Do not exceed the Safe Working Load • When transporting a load keep the load as close as possible to the ground.		4

		Struck by falling material or equipment	Injury to the driver or people Damage to property or material	S	4	4	16	• Use pallets when loading • Take care that the load is properly secured on the forks before driving • Suspend high loads • Ensure that the load is secured before extracting forks.	DMR (18)	4
2	Offloading equipment and Material	Struck by falling Objects		S	4	4	16	• Employees must communicate when offloading material • Use correct lifting techniques • Ensure there are no sharp edges to cut slings • Make use of guide ropes while lifting equipment/material. • Ensure sufficient space for the placement of equipment / Material in the lay-down area/site.	DMR (18) GSR (8)	4
		Falling materials	Varied results from loss of life to serious injuries. Damage to material Equipment or Property	S	5	4		• Ensure material is safely secured before commencing to offload • Communicate when lifting material or equipment • Ensure Container are empty before off-loading		5
		Climb into vehicles to offload	People climbing on vehicles may fall	S	2	2	4	• Ensure equipment is properly secured and stable before ascending • Beware of slipping (Use safety boots and gloves in Good condition)		2

3	Manual materials handling	Sharp, rough edges or too heavy objects Accidental dropping of object	Hand injuries (laceration, contusions) Foot injuries (fractures, contusions) Eye injuries	S	2	3	6	• Wear appropriate PPE, I.e. safety gloves, safety shoes, safety glasses etc. • Use the correct lifting technique (Bend knees not back) • Good communication and organisation when working together • Do Hazard identification before handling • Toolbox talks		2
		Lack of communication		SH	3	4	12	• Good communication and organisation when working together • Do Hazard identification before handling • Toolbox talks		
		Incorrect lifting procedures/techniques	Multiple physical injuries Property damage	SH	3	4	12	• Employees must not lift materials 2/3 of their weight, and always seek assistance when lifting heavy objects.		
	Milling Asphalt	Incompetent persons operating milling machine	Multiple physical injuries Property damage	SH	3	4	12	• The milling machine operator must have a valid medical certificate of Fitness. • Operators must be legally appointed in writing and keep appointments in the I safety file.		
		Exposure to excessive noise	Multiple physical injuries Noise Induced Hearing loss	SH	3	5	15	• Ensure appropriate ear protection is worn at all times e.g. Ear Muffs/ear plugs. • Employees must wear PPE at all times.		
		Defective milling machine or mechanical failure	Multiple physical injuries Property damage	SH	3	5	15	• The milling machine must be inspected before any work commencements • All defects must be reported to the immediate supervisor • Keep records of milling machine inspections		
		Exposure to moving parts / rotating parts	Multiple physical injuries Amputations/lacerations	SH	3	5	15	• Keep hands and fingers away from rotating parts • Avoid pinch/crush points, always be alert at all times		
		Exposure to excessive dust	Lung infections Respiratory diseases	SH	3	5	15	• Ensure appropriate ear protection is worn at all times e.g. Ear Muffs/ear plugs. • Dust suppression methods must be implemented.		

		Lack of adequate communication	Multiple physical injuries Property damage	SH	3	4	12	• Good communication and organisation when working together • Do Hazard identification before handling • Toolbox talks		
		Lack of supervision / inadequate / absences of supervision	Multiple physical injuries Property damage	SH	3	4	12	• Supervision must be constant and visible at all times • No work must be performed in the absence of the appointed construction supervisor • Employees must report any unsafe conditions or conditions to the supervisor		
		Flying objects	Multiple physical injuries Eye injuries Property damage	SH	3	4	12	• All employees must wear appropriate, adequate and full PPE at all times – e.g. Hard Hats/safety glasses. • Ensure employees stay a safe distance from milling activities to avoid being struck by flying objects. • Employees must stay alert and focused at all times.		
		Simultaneous activities/man-machine interface	Multiple physical injuries Property damage	SH	3	4	12	• The construction supervisor must be aware of any simultaneous activities taking place at the airport runway. • Employees must work at designated working areas allocated to them.		
	Loading Trucks	Equipment or material falling from a truck	Injury to people or Damage to equipment	S	3	3	9	• Ensure all equipment or Materials are properly tied down before the truck leaves the premises. • Ensure that each material is tied down and that it cannot roll after being loaded or offloaded. • Ensure the proper stacking takes place (The bottom boxes can sustain the weight of the load on top)	GSR (8)	3
		No flagman/spotter to communicate with						•		

ROMH	OCCUPATIONAL H & S MANAGEMENT SYSTEM	*CSM – RA - 5*

RISK RATING		CONSE-QUENCES	PROBIBILITY						
15-25 EXTREME	**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible	**DATE:**	MAY 2025
8 - 14 HIGH	**H = HEALTH**							**LOCATION**	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
4 – 7 MEDIUM	**E = ENVIRONMENT**		5	4	3	2	1	**SCOPE OF WORK**	SEALING
1 - 3 LOW	**Q=QUALITY**								
S FATAL **H** FATAL **E** Major impact (Long term)		5	25	20	15	10	5	**ASSESSMENT TEAM**	RISK ASSESSOR SITE MANAGER PROJECT MANAGER
S Serious injury (Reportable) **H** Permanent none Lethal effect **E** High impact		4	20	16	12	8	4	**SIGNATURE: MANAGER**	
S Loss Time Injury (Less than 14 Days) **H** Reversible severe effect **E** High impact (6 Months)		3	15	12	9	6	3	**Rev / Date**	

S **H** **E**	Injury needs Medical Assistance Reversible Minor effect Slight impact (1 Month)	2	10	8	6	4	2	**CLIENT**	
S **H** **E**	Minor Injury (First Aid) No effect No effect	1	5	4	3	2	1	**DATE ACCEPTED**	FEBRUARY 2025

	TASK OR ACTIVITY	**HAZARDS (POTENTIAL DANGER)**	**POSSIBLE CONSEQUENCE LIKELY TO HAPPEN (HARM)**	RISK ANALYSIS				**EXISTING & PROPOSED CONTROL MEASURES**	**RESIDUAL RISK**	**ACTION ASSIGNED TO**
				SH EQ	**Consequenc**	**Likelihood**	**Risk Rating**			
2	**EXPOSING THE AREA TO BE SEALED BY HAND TO THE SPECIFIED DEPTH AND REMOVING TO SPOIL,**	Sharp objects	Personal injuries / Property damage	S	3	4	**12**	• All employees must wear proper PPE at all times • Proper HAND TOOLS MUST BE USED • Create awareness through daily toolbox talks • Daily pre-task risk assessment • communication	**2**	
		Limited working space	Personal injuries / Property damage	S	3	4	**12**	• ensure employees have sufficient working space at all times \ • keep a safe distance when handpick is being utilised • employees must communicate at all times		

3	**CLEANING AND COMPACTING THE SEALED AREA**	Workers being struck/run over by wacker / compactor	Personal injuries / Fatalities	S	4	4	**16**	• competent persons must utilize the compactor at all times • employees must avoid skin contact with hazardous substances • Create awareness through daily toolbox talks • Daily pre-task risk assessment communication	**12**	
	HAZARDOUS SUBSTANCES	In contact with Hot / Cold Asphalt Primer Oil/Petrol and Diesel	Skin irritation. Skin disease. Dermatites.	S	4	4	**16**	• Asphalt safety data sheet (SDS) must be communicated to all workers • Appropriate PPE for the task will be used – Safety glasses, wet-resistant hand gloves, gumboots, and long pants overall to be used. • All SDS Products must be available at the workplace at all times and all employees must understand, acknowledge and abide by the contents of the SDS.		
4	**SEALING: APPLYING TACK TO THE RUNWAY AND VISUAL WATER BLOCK OR SIMILAR APPROVED TO THE EDGES OF THE PATCH**	Working with hazardous substances	Skin irritation. Skin disease. Dermatites.	S	4	3	**12**	• Employee competency/certification – • Appropriate PPE for the task will be used – Safety glasses, wet-resistant hand gloves, gumboots, and long pants overall to be used. • Create awareness through daily toolbox talks • Daily pre-task risk assessment communication	**2**	

		Slippery wet surfaces.	Physical Injuries causing - strains, sprains, cuts and bruising employees. Muscular and skeletal damage.	S	4	3	**12**	• Employees are to watch out for slippery wet surfaces and watch footing at all times.		
		Slip, trip and falling.	Physical Injuries.	S	4	3	**12**	• Watch your step and always keep the workplace tidy and neat. • Safety footwear is provided to all workers.		
		Exposure to flying objects: foreign bodies.	Physical Injuries.	S	4	3	**12**	• All personnel/employees involved in backfilling should wear appropriate PPE such as eye protection. • A safe working distance between the operation and members of the public and colleagues must be maintained at all times. •		
	SEALING THE JOINTS WITH VIASEAL WATERBLOK OR SIMILAR APPROVED PRODUCT	Exposure to Nip points/crush points	Finger injuries Foot injuries	S	4	3	**12**	• Avoid putting hands or fingers between moving or pivot points • Correct PPE will be used when handling formwork material ;(hand gloves, safety boots, reflective vest, and safety glasses will be utilised at all times.		

	OCCUPATIONAL H & S MANAGEMENT SYSTEM **CSM**	CSM REV:01
	RISK ASSESSMENT: HOT ASPHALT	***CSM - RA-06***

RISK RATING		CONSE-QUENCES	PROBIBILITY					DATE:	MAY 2025
15-25 EXTREME	**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible	**LOCATION**	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
8 - 14 HIGH	**H = HEALTH**							**SCOPE OF WORK**	HOT ASPHALT - ASPHALT APPLICATION
4 – 7 MEDIUM	**E = ENVIRONMENT**		5	4	3	2	1		
1 - 3 LOW	**Q=QUALITY**								
S FATAL **H** FATAL **E** Major impact (Long term)		5	25	20	15	10	5	**ASSESSMENT TEAM**	RISK ASSESSOR SITE MANAGER PROJECT MANAGER
S Serious injury (Reportable) **H** Permanent none Lethal effect **E** High impact		4	20	16	12	8	4	**SIGNATURE:** **MANAGER**	
S Loss Time Injury (Less than 14 Days) **H** Reversible severe effect **E** High impact (6 Months)		3	15	12	9	6	3	**Rev / Date**	
S Injury needs Medical Assistance **H** Reversible Minor effect **E** Slight impact (1 Month)		2	10	8	6	4	2	**CLIENT**	
S Minor Injury (First Aid) **H** No effect **E** No effect		1	5	4	3	2	1	**DATE ACCEPTED**	MAY 2025

		HAZARDS	POSSIBLE CONSEQUENCE	RISK ANALYSIS		R	A C TI

	TASK OR ACTIVITY	(POTENTIAL DANGER)	LIKELY TO HAPPEN (HARM)	*SH EQ*	Consequenc	Likelihood	Risk Rating	EXISTING & PROPOSED CONTROL MEASURES		
1	**APPLYING HOT ASPHALT**	Machinery fumes / Dust	Inhalation of petrol fumes/dust	SH	2	4	**8**	• Employees must stay a safe distance from • Workers to wear appropriate PPE (Dust Masks) • Create awareness through Toolbox Talks.	**4**	Construction Supervisor
		Exposure to hot asphalt	Skin severe burns Skin irritations	S	4	4	**16**	• All employees working with hot Asphalt must wear appropriate and adequate PPE at all times when handling Hot asphalt • Employees must wear appropriate respiratory PPE	**4**	
		Vibration	Equipment emissions cause hand-arm vibration. If constant exposure is likely to exceed 5m/s/s per day then - Management is required.	S	3	4	**12**	• Equipment used within agreed limits. • Carry out vibration tests on all relevant equipment and colour code • Employees to drink a lot of water	**4**	
		Sharp objects/ working close to machinery	Personal injuries / Property damage	S	3	4	**12**	• No employees must work close • Create awareness through daily toolbox talks • Daily pre-task risk assessment • communication	**2**	

		Limited working space	Personal injuries / Property damage	S	3	4	**12**	• ensure employees have sufficient working space at all times when applying hot asphalt • keep a safe distance when hot asphalt is being sprayed • employees must communicate at all times when applying hot asphalt	**2**	
		Workers being struck/run over by wacker / compactor	Personal injuries / Fatalities	S	4	4	**16**	• Operator competency/certification • Spotter to be appointed during TLB operations • Create awareness through daily toolbox talks • Daily pre-task risk assessment communication	**2**	
	CONTACT HAZARDOUS SUBSTANCES – HOT ASPHALT	In contact with Hot / Cold Asphalt Primer Oil/Petrol and Diesel	Skin irritation. Skin disease. Dermatites.	S	4	4	**16**	• Asphalt safety data sheet (SDS) must be communicated to all workers • Appropriate PPE for the task will be used – Safety glasses, wet-resistant hand gloves, gumboots, and long pants overall to be used. • All safety data sheets for Hot/cold asphalt SDS Products must be available at the workplace at all times and all employees must understand, acknowledge and abide by the contents of the SDS.	**2**	

		Machinery working too close to the employees	Multiple physical injuries Struck by moving machinery	S	4	3	**12**	• Employees must stay a safe distance from moving machinery • Operator competency/certification • Spotter to be appointed during hot asphalt application • Create awareness through daily toolbox talks • Daily pre-task risk assessment communication	**2**	
		Slippery wet surfaces	Physical Injuries causing - strains, sprains, cuts and bruising employees Muscular and skeletal damage	S	4	3	**12**	• Employees are to watch out for slippery wet surfaces and watch footing at all times. • Avoid stepping on hot asphalt and appropriate PPE must be worn at all times	**2**	
		Slip, trip and falling	Physical Injuries	S	4	3	**12**	• Watch your step and always keep the workplace tidy and neat. • Safety footwear is provided to all workers.	**2**	
		Exposure to flying objects: foreign bodies	Physical Injuries	S	4	3	**12**	• All personnel/employees involved in hot asphalt application should wear appropriate PPE such as eye protection. • A safe working distance between the operation and members of the public and colleagues must be maintained at all times.		

		Exposure to Nip points/crush points	Finger injuries Foot injuries	S	4	3	**12**	• Avoid putting hands or fingers between moving or pivot points • Correct PPE will be used when handling hot asphalt material ;(hand gloves, safety boots, reflective vest, and safety glasses will be utilised at all times.		

ROMH	OCCUPATIONAL H & S MANAGEMENT SYSTEM	
	RISK ASSESSMENT: COMPACTING RUNWAY	***CSM- RA – 07***

RISK RATING		**CONSE-QUENCES**	**PROBIBILITY**				
15-25 EXTREME	**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible
8 - 14 HIGH	**H = HEALTH**						
4 – 7 MEDIUM	**E = ENVIRONMENT**		5	4	3	2	1
1 - 3 LOW	**Q=QUALITY**						
S	FATAL	5	25	20	15	10	5
H	FATAL						
E	Major impact (Long term)						

DATE:	MAY 2025
LOCATION	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
SCOPE OF WORK	COMPACTING RUNWAY
ASSESSMENT TEAM	RISK ASSESSOR SITE MANAGER PROJECT MANAGER

S **H** **E**	Serious injury (Reportable) Permanent none Lethal effect High impact	4	20	16	12	8	4	**SIGNATURE:** **MANAGER**	
S **H** **E**	Loss Time Injury (Less than 14 Days) Reversible severe effect High impact (6 Months)	3	15	12	9	6	3	**Rev / Date**	MAY 2025
S **H** **E**	Injury needs Medical Assistance Reversible Minor effect Slight impact (1 Month)	2	10	8	6	4	2	**CLIENT**	
S **H** **E**	Minor Injury (First Aid) No effect No effect	1	5	4	3	2	1	**DATE ACCEPTED**	

	TASK OR ACTIVITY	HAZARDS (POTENTIAL DANGER)	POSSIBLE CONSEQUENCE LIKELY TO HAPPEN (HARM)	RISK ANALYSIS				EXISTING & PROPOSED CONTROL MEASURES	RESIDUAL RISK	ACTION ASSIGNED TO
				SH EQ	Consequenc	Likelihood	Risk Rating			
1	**PRE-USE INSPECTIONS OF THE ROLLER COMPACTOR**	Failure to do pre-use inspections	Multiple physical injuries Property damage	SH	2	4	**8**	• The roller compactor will be inspected before coming to the site or performing any compacting work. • All defects on the roller compactor • Workers to wear appropriate PPE • Create awareness through Toolbox Talks.	**4**	Construction Supervisor
		Defective roller compactor / leaking hydraulics or air pipes	Multiple physical injuries Property damage Ground pollution	SH E	3	4	**12**	• Ensure all defects are attended to before any compactions take place • Drips trays must always be available in case of any leaks • Any malfunctioning of the roller is to be reported to the supervisor • Daily Pre-Task Risk Assessment	**6**	
		Incompetent operators/roller operator	Multiple physical injuries Property damage Fatality	SH	3	4	**12**	• Roller compactor Operator must have relevant competency/certificates • Ensure the roller compactor has a valid medical certificate of fitness and the operator is legally appointed in writing • Supervisor must ensure operator certificates are verified • Daily Pre-Task Risk Assessments	**9**	

		Occupational vibration exposure	• Back pain • Decreased grip strength • Decreased hand sensation and dexterity • Finger blanching or “white fingers” • Carpal tunnel syndrome	H	4	4	**16**	• Ensure that workers are rotated every half hour with half-hour breaks • Create awareness through daily toolbox talks • Daily pre-task risk assessment communication	**9**	
2	**COMPACTING THE RUNWAY**	Vibration / man-machine interface	Personal injuries / Property damage	SH	3	4	**12**	• No employees to be close to the compactor during compacting operations • Ensure a spotter/flagman is appointed and communicate with the roller compactor operator during operations • Ensure operators can rotate activity if there is another operator • Create awareness through daily toolbox talks • Daily pre-task risk assessment • communication	**2**	

		Workers being struck/run over by roller compactor	Personal injuries / Fatalities	Sh	4	4	**16**	• roller compactor operator must be aware of employees working around him • all employees working on the runway must wear reflective clothing at all times • Spotter to be appointed during roller compactor operations • Employees must stay a safe distance when the roller compactor is operating • Daily pre-task risk assessment communication	**12**	
		Roller compactor working too close to other operations or open excavations	Damage to property and injure employees Excavation could collapse	SH	3	4	**12**	• The roller compactor must not operate close to other runway activities or too close to any open excavations and avoid sloppy areas where it may fall or roll • Operator competency/certification • Spotter to be appointed during roller compactor operations • Create awareness through daily toolbox talks • Daily pre-task risk assessment communication	**2**	
		Compactor fumes / Dust	Inhalation of petrol fumes/dust	H	2	4	**8**	• Workers to wear appropriate PPE (Dust Masks) • Create awareness through Toolbox Talks.		

		Noise from compactor	Noise-induced hearing loss	H	3	3	**9**	• Workers to wear appropriate PPE (Ear Protection) • Create awareness through daily toolbox talks. • Daily Pre-Task Risk Assessments		
		The compactor is out of control due to uneven surfaces	Personal injury	S	3	4	**12**	• Operator competency/certificates • Ensure that ground levels are evened out as far as possible • Create awareness through daily toolbox talks • Daily Pre-Task Risk Assessments		

ROMH

OCCUPATIONAL H & S MANAGEMENT SYSTEM

RISK ASSESSMENT

ROAD MARKING

CSM - RA -08

RISK RATING		**CONSE-QUENCES**	**PROBIBILITY**					**DATE:**	MAY 2025
15-25 EXTREME	**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible	**LOCATION**	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
8 - 14 HIGH	**H = HEALTH**							**SCOPE OF WORK**	ROAD MARKING - RUNWAY MARKINGS
4 – 7 MEDIUM	**E = ENVIRONMENT**		5	4	3	2	1		
1 - 3 LOW	**Q=QUALITY**								

S **H** **E**	FATAL FATAL Major impact (Long term)	5	25	20	15	10	5	**ASSESSMENT TEAM**	Risk Assessor Site Supervisor Construction Manager SHE Rep
S **H** **E**	Serious injury (Reportable) Permanent none Lethal effect High impact	4	20	16	12	8	4	**SIGNATURE: SUPERVISOR**	
S **H** **E**	Loss Time Injury (Less than 14 Days) Reversible severe effect High impact (6 Months)	3	15	12	9	6	3	**CLIENT**	
S **H** **E**	Minor Injury (First Aid) No effect No effect	1	5	4	3	2	1	**DATE ACCEPTED**	MAY 2025

	TASK OR ACTIVITY	**HAZARDS (POTENTIAL DANGER)**	**POSSIBLE CONSEQUENCE LIKELY TO HAPPEN (HARM)**	RISK ANALYSIS				**EXISTING & PROPOSED CONTROL MEASURES**	**RESIDUAL RISK**	**ACTION ASSIGNED TO (Responsible)**
				SHEQ		Likelihood	Risk Rating			
1	**INSPECTION OF THE WORK AREA**	Unfamiliar with the site-specific safety regulations	Physical Multiple Injuries	SH	4	3	12	• All employees working on site will undergo site-specific inductions before executing work on site and will adhere to site-specific safety regulations. • Site SHE Officer will ensure that all employees reporting on-site/ project have undergone site-specific inductions and familiarize themselves with site safety regulations.	2	Construction health and safety Officer

		People with medical conditions	Fatalities, self-injuries, disease spread to other workers	SH	5	3	15	• All employees working on site will undergo a Medical Examination by a **Registered OHP** and Medical Fitness Certificates will be attached with **Annexure 3** before executing work on site.		Construction health and safety Officer
		Man-machine interface- and moving Surface Mobile Equipment e.g. TLB. Tipper trucks etc..	Physical Multiple Injuries	SH	5	3	15	• All employees must undergo site or project induction and visitor induction. • All employees will walk on-site on designated safe walkways • A flagman must be appointed to control pedestrians and traffic movement on-site	6	Construction health and safety Officer and Construction Supervisor
		Interaction with other contractor's activities	Physical Multiple Injuries	SH	4	3	12	• All employees entering the construction site will be notified of other contractors' activities and restricted areas will be communicated to all employees.	1	Construction health and safety Officer and Construction Supervisor
		Incorrect or inadequate PPE on Construction Site	Physical Multiple Injuries	SH	4	3	12	• All employees will be provided with appropriate adequate PPE free of charge before commencing work on the construction site.	1	Construction health and safety Officer and Construction Supervisor
		Walking on uneven surfaces	Physical Multiple Injuries	SH	4	3	12	• All employees on the Construction Site must be alert, and focused and watch their steps at all times.	2	Construction health and safety Officer and Construction Supervisor

		Exposure to dust / Inhalation of Dust	Physical Multiple Injuries Ill health	SH	4	3	12	• Dust suppression methods are to be used to minimize dust when too much. • All employees will be issued with dust mask (Appropriate) PPE at times.	2	Construction health and safety Officer and Construction Supervisor
		Unauthorized entry on-site or entering restricted areas	Self-injuries, disease spread to other workers	SH	3	3	9	• Security measures must be in place and adequate safety signage and machine guarding to warn the public of the immediate hazards	2	Construction health and safety Officer and Construction Supervisor
2	**PRE-USE INSPECTION OF HAND TOOLS, EQUIPMENT**	Inadequate completion of pre-use checklist of road marking machinery	Property damage Physical Multiple Injuries	SHE	3	4	12	• The construction supervisor will ensure that the TLB Operator or mobile plant operators do daily inspections of the plant before site operations. • Plant inspector	3	Construction health and safety Officer and Construction Supervisor
		Incompetent persons doing tool/ mobile plant inspection	Physical Multiple Injuries	SH	3	3	9	• Competent appointed persons must do pre-inspections on the mobile plant, and a hand tool inspector to check all hand tools before work commences and ensure that all hand tools taken to the site are in good working conditions Faulty tools will be removed from the site	1	Construction Supervisor
		Failure to inspect Hand tools, Electrical equipment, and Mobile plant	Physical Multiple Injuries	S	3	4	12	• Hand tools and, electrical equipment must be inspected before use • The construction supervisor will ensure that all hand tools and equipment used on site are in good working condition	2	Construction health and safety Officer and Construction Supervisor

		Using defective hand tools or substandard tools	Self-injuries, disease spread to other workers	SE	3	3	9	Faulty tools will be removed from the site	2	Construction Supervisor
		Sharp-edged tools	Self-injuries, disease spread to other workers	S	3	3	9	• Keep hands and fingers away from sharp edges of hand tools and ensure that full correct PPE is worn during inspections and at all times when handling tools.	2	Construction health and safety Officer and Construction Supervisor
		Poor housekeeping / inadequate tool and equipment storage	Physical Multiple Injuries Ill health	S	1	4	4	• Housekeeping shall be done continuously and maintained at all times • The construction supervisor will ensure that all tools and equipment have adequate stacking and storage area	2	Construction health and safety Officer and Construction Supervisor
3	**CONDUCT DSTI**	Hazards are not communicated to personnel involved in the activity – therefore they fail to recognize hazards.	Multiple physical injuries, fatality, and Property damage.	SHE	3	4	12	• The appointed construction supervisor will ensure that all hazards noted on specific tasks are communicated to employees and that all employees acknowledge understanding and sign in acknowledgement.	1	Construction Supervisor
		Failure to adequately identify all the hazards and consider simultaneous activities/ other contractors' activities	Multiple physical injuries,	SH	4	3	12	• Construction supervisor to ensure that all hazards including of other contractors interfacing are adequately identified and communicated to the workforce.	1	Construction Supervisor
		Employees not contributing to hazard identification.	Physical Multiple Injuries	SH	3	3	9	• All employees are to participate during hazard identification for particular tasks and are noted in the DSTI.	1	Construction Supervisor

		Incompetent persons doing HIRA	Ergonomic injuries	SH	3	3	9	• Construction supervisors must be trained in HIRA and be competent to adequately identify all potential hazards in the workplace.	2	Construction Supervisor
7	**REFUELING OF MECHANICAL MARKER**	Sparks and flames Contact with the skin spillages Contamination or spillages Fire and explosion	A hot engine can ignite the fuel and this can cause bodily harm. Environmental damage	SH	3	4	12	• The engine must be shut off before refuelling. • Refueling must take place in a well-ventilated area • Ensure that there are no naked flames in the area. • DO NOT SMOKE • Avoid spilling fuel and clean up any fuel runoff. • Wear protective clothing i.e. Gloves and eye protection. • Ensure that a fire extinguisher is present. • Remove clothes that absorb fuel and wash them. • If skin comes into contact with fuel, wash the area before working. • A Spill kit must always be available • Fuel is to be stored in a locked		Construction Supervisor and Employees

8	**ROAD MARKING**	Ejection of debris from cleaning Inhalation, chemical from PAINT Musculoskeletal from lifting heavy objects, Paint containers. Musculoskeletal from marking out. Irritation to eyes	Staff dedicated to preparing the edges Preparation team Preparation team Workers using the machines or those who are closer to the spraying machine	SH	3	4	12	• Ensure that all equipment is properly serviced • Ensure that all equipment is registered and legally on-site • Ensure that all equipment complies with project-specific inspection requirements. • Ensure that the correct PPE is worn, goggles and dust musk's • Communicate with the employees the MSDS of the product used • Do not let one person pick up heavy containers on their own. Group effort is the key. • If possible, use mechanical lifting methods. Use wheelbarrows to transport heavy containers. • Avoid bending for too long • Googles must be worn at all times.		Construction Supervisor and Employees
9	**ROAD MARKING PAINT - WET PAINT**	Slippery surface	Fractures Multiple physical injuries	SH	3	4	12	• Competent persons must do road markings at all times • Correct PPE must be worn at all times • Employees must avoid skin contact with road marking paint		Construction Supervisor and Employees

12	**CLOSE-OUT DSTI**	Hazards not closed out properly – failure to recognize ongoing hazards	Multiple physical injuries,	SH	3	4	12	• Appointed, a competent supervisor to ensure that DSTI is closed out at activity completion • DSTI to be closed daily at activity commencement or if the nature of the conditions changes during the activity in accordance with SHE Specifications • DSTI is to be closed out by a responsible, appointed supervisor at the end of the activity or day • The appointed area manager is to ensure that all control measures are in place.		Construction Supervisor and Employees

ROMH	OCCUPATIONAL H & S MANAGEMENT SYSTEM	
	RISK ASSESSMENT - **KERBING**	***CSM - RA -09***

RISK RATING		**CONSE-QUENCES**	**PROBIBILITY**					**DATE:**	MAY 2025
15-25 EXTREME	**S = SAFETY**		Almost Certain	Likely	Possible	Unlikely	Almost Impossible	**LOCATION**	RUNWAY AND TAXIWAY REHABILITATION AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
8 - 14 HIGH	**H = HEALTH**							**SCOPE OF WORK**	KERBING
4 – 7 MEDIUM	**E = ENVIRONMENT**		5	4	3	2	1		
1 - 3 LOW	**Q=QUALITY**								

S **H** **E**	FATAL FATAL Major impact (Long term)	5	25	20	15	10	5	**ASSESSMENT TEAM**	RISK ASSESSOR SITE SUPERVISOR CONSTRUCTION MANAGER SHE REP
S **H** **E**	Serious injury (Reportable) Permanent none Lethal effect High impact	4	20	16	12	8	4	**SIGNATURE: SUPERVISOR**	
S **H** **E**	Loss Time Injury (Less than 14 Days) Reversible severe effect High impact (6 Months)	3	15	12	9	6	3	**CLIENT**	
S **H** **E**	Minor Injury (First Aid) No effect No effect	1	5	4	3	2	1	**DATE ACCEPTED**	MAY 2025

	TASK OR ACTIVITY	**HAZARDS (POTENTIAL DANGER)**	**POSSIBLE CONSEQUENCE LIKELY TO HAPPEN (HARM)**	RISK ANALYSIS				**EXISTING & PROPOSED CONTROL MEASURES**	**RESIDUAL RISK**	**ACTION ASSIGNED TO (Responsible)**
				SHEQ		Likelihood	Risk Rating			
1	**INSPECTION OF THE WORK AREA**	Unfamiliar with the site-specific safety regulations	Physical Multiple Injuries	SH	4	2	8	• All employees working on site will undergo site-specific inductions before executing work on site and will adhere to site-specific safety regulations. • Site SHE Officer will ensure that all employees reporting on-site/ project have undergone site-specific inductions and familiarize themselves with site safety regulations.	2	Construction health and safety Officer

		People with medical conditions	Fatalities, self-injuries, disease spread to other workers	SH	5	3	15	• All employees working on site will undergo a Medical Examination by a **Registered OHP** and Medical Fitness Certificates will be attached with **Annexure 3** before executing work on site.		Construction health and safety Officer
		Man-machine interface- and moving Surface Mobile Equipment e.g. TLB. Tipper trucks etc..	Physical Multiple Injuries	SH	5	3	15	• All employees must undergo site or project induction and visitor induction. • All employees will walk on-site on designated safe walkways • A flagman must be appointed to control pedestrians and traffic movement on-site	6	Construction health and safety Officer and Construction Supervisor
		Interaction with other contractor's activities	Physical Multiple Injuries	SH	1	3	3	• All employees entering the construction site will be notified of other contractors' activities and restricted areas will be communicated to all employees.	1	Construction health and safety Officer and Construction Supervisor
		Incorrect or inadequate PPE on Construction Site	Physical Multiple Injuries	SH	1	3	3	• All employees will be provided with appropriate adequate PPE free of charge before commencing work on the construction site.	1	Construction health and safety Officer and Construction Supervisor
		Walking on uneven surfaces	Physical Multiple Injuries	S	3	3	9	All employees on the Construction Site must be alert, and focused and watch their steps at all times.	2	Construction health and safety Officer and Construction Supervisor

		Exposure to dust / Inhalation of Dust	Physical Multiple Injuries Ill health	SH	3	3	9	• Dust suppression methods to be used to minimize dust when too much. All employees will be issued with dust mask (Appropriate) PPE at times.	2	Construction health and safety Officer and Construction Supervisor
		Unauthorized entry on-site or entering restricted areas	Self-injuries, disease spread to other workers	SH	3	3	9	• Security measures must be in place and adequate safety signage and machine guarding to warn the public of the immediate hazards	2	Construction health and safety Officer and Construction Supervisor
2	**PRE-USE INSPECTION OF HAND TOOLS, EQUIPMENT**	Incompetent persons doing tool/ mobile plant inspection	Physical Multiple Injuries	SH	3	3	9	• Competent appointed persons must do pre-inspections on the mobile plant, and a hand tool inspector to check all hand tools before work commences and ensure that all hand tools taken to the site are in good working conditions. • Faulty tools will be removed from the site.		
		Failure to inspect Hand tools, Electrical equipment, and Mobile plant	Physical Multiple Injuries	S	3	4	12	• Hand tools and, electrical equipment must be inspected before use The construction supervisor will ensure that all hand tools and equipment used on site are in good working condition	2	Construction Supervisor
		Using defective hand tools or substandard tools	Self-injuries, disease spread to other workers	SE	3	3	9	• Faulty tools will be reported to the construction supervisor and immediately removed from the site.	2	Construction Supervisor
		Sharp-edged tools	Self-injuries, disease spread to other workers	S	3	3	9	Keep hands and fingers away from sharp edges of hand tools and ensure that full correct PPE is worn during inspections and at all times when handling tools.	2	Construction Supervisor

		Poor housekeeping / inadequate tool and equipment storage	Physical Multiple Injuries Ill health	S	1	4	4	• Housekeeping shall be done continuously and maintained at all times • The construction supervisor will ensure that all tools and equipment have adequate stacking and storage area	2	Construction Supervisor
3	**CONDUCTING DSTI/ JSA /MINI RISK ASSESSMENT OR JSA**	Hazards are not communicated to personnel involved in the activity – therefore they fail to recognize hazards.	Multiple physical injuries, fatality, and Property damage.	SHE	3	4	12	• The appointed construction supervisor will ensure that all hazards noted on specific tasks are communicated to employees and that all employees acknowledge understanding and sign in acknowledgement.	1	Construction Supervisor
		Failure to adequately identify all the hazards and consider simultaneous activities/ other contractors' activities	Multiple physical injuries,	S	1	4	4	• Construction supervisor to ensure that all hazards including of other contractors interfacing are adequately identified and communicated to the workforce.	1	Construction Supervisor
		Employees not contributing to hazard identification.	Physical Multiple Injuries	S	3	3	9	• All employees are to participate during hazard identification for particular tasks and are noted in the DSTI.	1	Construction Supervisor
		Incompetent persons doing HIRA	Ergonomic injuries	SH	3	3	9	• Construction supervisors must be trained in HIRA and be competent to adequately identify all potential hazards in the workplace.	2	Construction Supervisor
4	**DELIVERY and OFFLOADING OF KERBS**	Failure to arrange delivery times of suppliers	Time delay/schedule impact Multiple physical injuries,	SHE	3	4	12	• The construction Manager and supervisor should arrange for delivery and they will prepare safe stacking and storage locations.	2	Construction Supervisor
		Access and egress of delivery trucks – security	Self-injuries, theft	SE	3	3	9	• The construction supervisor will ensure there is adequate, safe access and egress point control at the construction site. • Security ensures they verify drivers' competence and truck roadworthiness before authorizing entry to the construction site.	2	Construction Supervisor

		Failure to obey site-specific traffic regulations	Multiple physical injuries,	SHE	3	4	15	• All construction vehicle operators and delivery truck drivers will obey specific speed limits and specific site-specific **Traffic Management Plans.** • All employees on site are to walk in designated safe walkways and avoid walking on the construction haul roads where they mingle with construction vehicles.		Construction Supervisor
		Lack of or inadequate communication	Self-injuries	S	3	3	9	• Communication shall take place at all times especially during offloading when passing one another material.	2	Construction Supervisor
		Manual material handling	Ergonomic injuries Physical Multiple Injuries Ill health	S	3	3	9	• Employees are to avoid jerky twisting movements and adhere to correct safe manual lifting procedures at all times.	2	Construction Supervisor
		Inadequate PPE	Physical Multiple Injuries	SH	3	3	9	• All employees involved in loading and offloading of material will be provided with adequate PPE and will utilize it appropriately at all times.	1	Construction Supervisor
		Exposure to Pinch, nip, and crush points	Physical Multiple Injuries	SHE	3	4	12	• Avoid contact with moving parts and do not put your fingers between loads or material during offloading • Hand protection must be worn at all times	2	Construction Supervisor
		Unsafe access to the trucks	Physical Multiple Injuries					• Use a safe step ladder at all times to gain access to the truck if it's too high. • All employees are to adhere to 3-point contact at all times and ensure that access to a truck is safe at all times.		Construction Supervisor
		Man-machine interface	Physical Multiple Injuries					• Employees are to use safe walkways at all times and avoid walking on construction site haul roads.		Construction Supervisor

5	**STACKING AND STORAGE OF KERBS MATERIAL**	Inadequate stacking and storage area	Property Damage (to existing infrastructure.)	SHE	3	4	12	• The constriction supervisor will ensure that sufficient stacking and storage area is allocated before the delivery of materials on-site.	1	Construction Supervisor
		Failure to barricade stacking and storage area	Property Damage, Physical Injuries	S	1	4	4	• The stacking and storage supervisor will ensure that the storage yard is adequately barricaded to prevent unauthorized entry.	1	Construction Supervisor
		Unstable stacks – Kerbs bricks	Physical Multiple Injuries	S	3	3	9	• Stacks will not be stacked too high or 3 times the dimension of the base. • A material safety data sheet MSDS will be communicated and acknowledged by all employees. • 16-point MSDS to be available at the stacking and storage area.		Construction Supervisor
		Unsafe high stacks/ falling stacks	Physical Multiple Injuries	S	3	3	9	• The construction supervisor or stacking and storage supervisor will ensure that stacks are not too high and		Construction Supervisor
		Unstable ground	Physical Multiple Injuries	S	3	3	9	• The stacking and stacking supervisor must pre-check the stability of the stacking and storage area before establishing the area.		Construction Supervisor
6	**SETTING OUT-LEVELLING THE GROUND WITH RAKES & SHOVELS**	Using substandard hand tools	Physical Multiple Injuries	SHE	3	2	6	• All hand tools will be inspected before any task commences all equipment that requires tagging will be tagged and faulty tools will be immediately removed from the site. • No homemade tools are allowed to be used.	1	Construction Supervisor
		Uneven, slippery surfaces - slip, trip & fall	Physical Multiple Injuries	SE	3	2	6	• Employees are to watch out for uneven surfaces and maintain good housekeeping at all times.	1	Construction Supervisor

		Incompetent persons	Physical Multiple Injuries Property damage	S	3	2	6	• Competent persons must perform tasks at all times under the constant supervision of an appointed supervisor.	1	Construction Supervisor and Employees
		Incorrect postures	Physical Multiple Injuries	S	3	2	6	• Acquire the right positions when working avoid awkward positions, twisting and jerky postures	1	Construction Supervisor and Employees
		Exposure to dust and flying objects: foreign bodies	Physical Multiple Injuries	S	3	2	6	• All personnel/employees involved in ground levelling should wear appropriate PPE for the task. (Dust mask, overalls, safety glasses, gloves)	1	Construction Supervisor and Employees
		Inadequate supervision	Physical Multiple Injuries	S	3	2	6	• Work will be performed in the presence of appointed supervision as per Construction Regulation 8(7) and supervision to be constant and visible at all times.	1	Construction Supervisor and Employees
		Working in direct sunlight, exposure to the sun rays	Physical Multiple Injuries	S	3	2	6	• Sufficient clean drinking water must be readily available and employees to consume enough water to regularize their body temperatures • Hard hat sunbeams may be used to minimize direct sun exposure	1	Construction Supervisor and Employees
		Exposure to dust – inhalation	Physical Multiple Injuries Lung disease/ chest problem	S	3	2	6	• Water will be sprinkled all over the workplace to avoid too much dust emission • Employees to ensure that dust masks are utilised	1	Construction Supervisor and Employees
		Exposure to marking pegs	Puncture wounds Physical Multiple Injuries	S	3	2	6	• All marking pegs/ rebar will be closed with rebar caps to prevent employees from stepping on them • Pegs are to be visibly marked by danger tape for visibility	1	Construction Supervisor and Employees

7	**COMPACTING KERBING GROUND WITH PLATE COMPACTOR**	Failure to pre-inspect the Flat compactor machine / Using defective compactor	Physical Multiple Injuries	S	3	2	6	• Pre – Checklist of the flat compactor will be done before the machine is used and all will be recorded against the checklist, defects will be reported to the supervisor	1	Construction Supervisor and Employees
		Fume inhalation from machinery, flat compactor	Physical Multiple Injuries	S	3	3	9	• Appropriate PPE shall be used during compacting, use a dust mask to minimize inhalation	1	Construction Supervisor and Employees
		Exposure to noise	Physical Multiple Injuries	S	3	3	9	• Correct PPE will be worn at all times, utilize earplugs when compacting with a flat compactor, and all employees working in the vicinity of the machine to wear hearing protection	1	Construction Supervisor and Employees
		Vibration	Physical Multiple Injuries	S	3	3	9	• Rotate the compacting machine regularly and ensure that competent persons use the compactor machine.	1	Construction Supervisor and Employees
		Fire hazard, naked flames or smoking near petrol compactor	Physical Multiple Injuries Property damage	SHE	5	3	15	• Smoking near the compactor machine is highly prohibited, no naked flames are allowed near the petrol compactor and a fire extinguisher will be readily available during compacting activity	1	Construction Supervisor and Employees
8	**SPREADING SAND ON THE GROUND AND LEVELLING**	Sub-standard tools	Physical Multiple Injuries	SHE	3	4	12	• All hand tools will be pre-inspected before use and shall be monthly color-coded • Defective equipment or hand tools must be removed from site/work area	1	Construction Supervisor and Employees
		Inadequate Personal Protective Equipment or failure to use provided PPE	Physical Multiple Injuries	SHE	3	4	12	• All employees are to utilize provided PPE, Hand gloves, safety glasses, reflective vest, safety boots, and long pants overalls at all times.	1	Construction Supervisor and Employees

		Exposure to dust	Physical Multiple Injuries Lung disease/ chest problem	SHE	3	4	12	• Dust suppression methods to be used, sand will be sprayed with water to avoid too much dust emission. • Utilize a dust mask at all times when excessive dust is emitted.	1	Construction Supervisor and Employees
		Flying objects / foreign bodies	Property damage	S	3	2	6	• Eye protection must be worn at all times and ensure spacious working area is attained, avoid working too close to each other.	1	Construction Supervisor and Employees
9	**KERBING - PLACING KERBS**	Incompetent personnel working with the paving bricks	Physical Multiple Injuries	SHE	3	4	12	• Ensure competent personnel work out the paving task under constant supervision of an appointed supervisor, (Construction Regulation 8.7)	1	Construction Supervisor and Employees
		Slip, trip and fall / poor housekeeping	Physical Multiple Injuries	SHE	3	4	12	• Proper housekeeping standards will be adhered to at all times, and all tools not in use will be kept away from the working area. • Spillages will be cleaned up immediately and disposed of correctly in the hazardous waste stream.	1	Construction Supervisor and Employees
		Limited working space	Physical Multiple Injuries	SHE	3	4	12	• Adequate working space should be provided at all times to ensure, sufficient area to perform work	1	Construction Supervisor and Employees
		Poor posture: ergonomic injury	Physical Multiple Injuries	SHE	3	4	12	• Acquire the right position when installing paving bricks and ensure you take adequate stretching breaks. • Rotate task from time to time do not spend most of the time-bending	1	Construction Supervisor and Employees
		Failure to use provided PPE, knee injuries	Physical Multiple Injuries	SHE	3	4	12	• Correct, full and appropriate PPE must be used at all times utilize knee pads when work is performed kneeling, to protect your knees from possible bruise injuries.		Construction Supervisor and Employees

		Poor housekeeping	Physical Multiple Injuries	SHE	3	4	12	• Good housekeeping principles to be adhered to and removing all hand tools not in use at the work area • Allocate stacking and storage area for all redundant material, and materials not in use to be stacked away from the working area.		Construction Supervisor and Employees
10	**CUTTING KERBS WITH CHISEL**	Pinch/ Nip points	Finger injuries/ bruises	SHE	3	4	12	• Competent persons to perform tasks and supervision to be constant all the time and be alert when using hammers and chisel. • Appropriate PPE will be utilised at all times when performing work.		Construction Supervisor and Employees
		Flying objects/ foreign bodies	Physical Multiple Injuries	S	3	3	9	• Wear safety glasses/ face shield when cutting paving bricks with chisel and ensure no mushroomed chisels are used to avoid splinters in the eyes.		Construction Supervisor and Employees
		Use of defective/ damaged or substandard hand tools	Physical Multiple Injuries	S	3	3	9	• Pre-inspect all hand tools before use and ensure that they are on the tool register and checklists are completed daily, do not use mushroomed chisels.		Construction Supervisor and Employees
		Inadequate Supervision or lack of communication	Physical Multiple Injuries	S	3	3	9	• All work will be performed in the presence of an appointed Construction Supervisor, (Construction Regulation 8.7) at all times and supervisor to enforce viable communication within employees.		Construction Supervisor and Employees
		Incorrect use of hand tools	Physical Multiple Injuries	S	3	3	9	• Use the right tool for the job, and inspect hand tools before work.		Construction Supervisor and Employees
11	**KERBING AT THE EDGES OF PAVING**	Exposure to cement dust/ inhalation	Physical Multiple Injuries	S	3	3	9	• Dust mask must be used during emptying of cement bags • Avoid inhalation of cement dust at all times		Construction Supervisor and Employees

		Skin/eye contact with cement	Physical Multiple Injuries	S	3	3	9	• Full Personal Protective Equipment will be utilised when performing tasks: face shield, long pants overall. • Avoid skin or eye contact with cement as far as reasonably practicable.		Construction Supervisor and Employees
		Use of incorrect hand tools, Nip /pinch points when mixing cement	Physical Multiple Injuries	S	3	3	9	• Utilize inspected hand tools and ensure and avoid putting fingers on moving parts of the hand tools.		Construction Supervisor and Employees
		Incorrect disposal of empty cement bags	Physical Multiple Injuries	S	3	3	9	• Empty contaminated cement bags will be compressed to smaller sizes and put into a refuse bag to be disposed of in the Hazardous Waste bin.		Construction Supervisor and Employees
		Slippery wet surfaces, slip trip and fall;	Physical Multiple Injuries	S	3	3	9	• Watch your step at all times and avoid stepping on wet surfaces		Construction Supervisor and Employees
		Mortar spillages / Failure to put Plastic Lining	Physical Multiple Injuries	S	3	3	9	• The plastic lining will be spread on the ground to curb all mortar spillages during the mixing of cement and sand. • Clean up all spillages.		Construction Supervisor and Employees
12	**HOUSEKEEPING**	Slip, trip and fall	Physical Multiple Injuries	S	3	3	9	• Employees to be alert and focused, and watch their footing at all times. • Watch out for uneven surfaces and ensure safe walkways are used all the time when walking on the construction site	1	Construction Supervisor
		Inadequate waste disposal skips or dust bins	Physical Multiple Injuries	SHE	3	2	6	• Adequate waste dust bins will be distributed around the construction site and employees will be trained on waste separation	1	Construction Supervisor

9. FINAL RISK PROFILE

The final risk profile follows:

CONSEQUENCE CRITERIA					
Level	**Outcome Description**	**Impact Values**	**Safety**	**Health**	**Environment**
Extreme	Extreme events with the potential to lead to the collapse of business and are fundamental to the achievement of objectives.	100	Multiple fatalities and very serious irreversible injury from 10 people and above.	May cause multiple deaths	Transboundary/National environmental disaster with long-term or irreversible ecological impacts with high risk of legal and public liability.
Major	A major event which can be endured but which may have a prolonged negative impact and extensive consequences.	50	Fatality, multiple Major injuries or disability, Significant irreversible injuries to up to 10 people.	Life-threatening effects.	National environmental disaster with long-term ecological impacts with high risk of legal and public liability.
High	High-impact events, can be managed but require additional resources and management	25	Single major injury or disabling reportable.	Irreversible significant health effects.	Event that leads to environmental contamination (failure to manage appropriately, but contained within site boundaries)
Moderate	Events which can be managed under normal operating conditions.	13	Minor injuries, lost time,	Reversible significant health effects	Event which can be contained. Is limited to the immediate area of occurrence associated with short-term ecological disturbances, and/or is a transgression of internal standard.

Minor	Events of which consequences can readily be absorbed under normal operating conditions	6	Minor injuries, no lost time	Reversible minor health effects	Minor negative impact, no corrective action necessary. Must be monitored.
Insignificant	Frequent minor risks that do not disrupt business, or with no adverse health effects or injuries.	3	No Health effects.	Negligible	Negligible

LIKELIHOOD CRITERIA		
Likelihood/ Probability rating	**Description**	**Percentage**
Almost certain	The event is expected to occur in most circumstances	100%
Very likely	The event will probably occur in most circumstances	67% -96%
Likely	The event should occur sometime	51% -66%
Unlikely	The event could occur sometime	34% -50%
Very unlikely	The event may occur only in exceptional circumstances.	2% - 33%
Almost impossible	The event may never occur	1%

EXPOSURE CRITERIA						
Factor	**Rating**	**Prescribed legal limits**	**Frequency**	**Duration**	**Extent**	**Environment**
1,00	Very high	>200%	2 X per Shift	<40Hrs	over 101m	Extensive
0,80	High	101%-200%	1 X per Shift	<8hrs>40Hrs	51-100m	Widespread
0,60	Medium	75%-100%	Weekly	<2hrs>8 Hrs	11-50m	Significant
0,40	Low	50%-75%	Monthly	<1Hrs>2Hrs	6-10m	Restricted
0,20	Insignificant	< 50%	Annually	> 1 hr	1-5m	Negligible

RISK MATRIX							
		1%	2% to 33%	34% to 50%	51% to 66%	67% to 96%	97% to 100%
		Almost Impossible	Very Unlikely	Unlikely	Likely	Very Likely	Almost Certain
	Basis Points	1%	18%	42%	59%	82%	100%
Extreme	100	1,0	17,5	42,0	58,5	81,5	100,0
Major	50	0,5	8,8	21,0	29,3	40,8	50,0
High	25	0,3	4,4	10,5	14,6	20,4	25,0
Moderate	13	0,1	2,3	5,5	7,6	10,6	13,0
Minor	6	0,1	1,1	2,5	3,5	4,9	6,0
Insignificant	3	0,0	0,5	1,3	1,8	2,4	3,0

Colour Code	Detail	Basis Point	Action Required
	Tolerable risk	0 to 3	Minor or no action is required.
	Medium risk	3.1 to 24.9	A planned approach to controlling the hazard and applying temporary measures when
	High risk	25 to 100	Immediate action is required, Strong mandatory action required

Once the impact, exposure and likelihood together with associated basis points and factors are determined, the risk score will be calculated as the inherent risk. The risk matrix illustrates a risk rating assignment for individual risk factors in the identified risk categories. The risk matrix shows the combination of impact, exposure and likelihood that in turn yields a risk priority (shown by the red, yellow, and green colours). Qualitative risk analysis shall lead to further analysis in quantitative risk analysis or directly to risk response planning.

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10. TOP 20 RANKED OHS-RELATED RISKS CLASSIFICATION AND CONTROL

	OHS Risk	Mitigation
3.1	Tight project schedule	• Formulating an appropriate schedule in the conceptual/inception phase is very important to the project OHS delivery. • The client should prepare a practical schedule allowing sufficient but not redundant time to accommodate all design and construction activities. • As time and cost are always closely correlated, a lengthy schedule will negatively on the project OHS budget.
3.2	Low management competency of subcontractors	Subcontractors normally allocate their manpower and other resources to different projects to achieve maximum profit for their own business. Without competent management skills, subcontractors cannot successfully manage their resources to meet the safety needs of several concurrent construction projects. • In addition to specialist abilities, management OHS competency should be regarded as one of the key criteria for appointing subcontractors.
3.3	Unsuitable construction program planning	Provide OHS experienced designers and contractors to prevent inadequate program scheduling, innovative design or contractors' lack of knowledge in planning construction programs.
3.4	Variations of construction programs	• An informative program scheduling should be worked out in the design phase, and the constructability of innovative design should be examined. • The abilities to manage construction programs and implement safe innovative designs should be used as key criteria in appointing contractors.

		• Lack of coordination between project participants may lead to chaos in the management of construction teams and programs. A general contractor or project manager who is skilful in team and program coordination should be engaged. On the other hand, strengthening the participant's perception of cooperation and communication is also important for improving construction safety, quality and efficiency.
3.5	High performance or quality expectations	• High performance/quality expectations may mean the sacrifice of project cost, time and even safety. The client defines the performance/quality of the proposed projects based on attainable needs to avoid instances where the outcome of the project may also be out of reach of the market or the client's OHS needs.
3.6	Design variations	• To avoid defective OHS design, the OHS team need to fully understand what the client wants as defined in the project brief, and also to establish an efficient OHS communication system with the designers.
3.7	Lack of coordination between project participants	• An informative program scheduling should be worked out in the design phase, and the constructability of innovative design should be examined. • The ability to manage construction programs and implement safe innovative design should be used as key criteria in appointing contractors. • Lack of coordination between project participants may lead to chaos in the management of construction teams and programs. A general contractor or project manager who is skilful in team and program coordination should be engaged. On the other hand, strengthening the participant's perception of cooperation and communication is also important for improving construction safety, quality and efficiency.

3.8	Unavailability of a sufficient amount of skilled labour	• The contractors should be mapping the construction progress all the time and coordinating different project stakeholders in order to secure sufficient professionals, managers and skilled labourers ready and capable of working safely.
3.9	Unavailability of sufficient professionals and managers	• The contractors should be mapping the construction progress all the time and coordinating different project stakeholders in order to secure sufficient professionals, managers and skilled labourers ready and capable of working safely.
3.10	Serious noise pollution caused by construction	• Contractors should arrange a suitable time for the construction work with serious noise and if necessary, make sound insulation on site. This will promote community support for the project and also prevent complaints and government interference.
3.11	Inadequate program scheduling	• Choosing experienced designers can help to minimize the difference between the proposed and practical program schedules. This is often evident in projects with a tight schedule when some programs are reduced to meet the project timeline putting pressure on OHS performance. Also, most facets of construction projects are affected by uncertainty, which makes it difficult to accurately predict the time required for various programs, thus negatively impacting OHS planning and control.
3.12	Variations by the client	• Variations possibly result from two reasons, the change of mind by the client or the misunderstanding /misinterpretation of the client's needs in the project brief. A knowledgeable initial project team should be established as early as possible to define the project scope and functions clearly.

3.13	Incomplete or inaccurate cost estimate	• Choosing responsible and experienced designers and if possible getting the contractors/subcontractors involved early can help to illuminate the black box and minimize the inaccuracy. • Ensuring that designers/consultants' knowledge and attitude towards work OHS compliance requirements is positive.
3.14	Incomplete approval and other documents	• The client needs to establish a competent team to obtain OHS approval from government agencies and prepare project documents effectively and efficiently.
3.15	General safety accident occurrence	• Contractors should establish a systematic construction program scheduling and provide safety training to on-site staff to improve their awareness.
3.16	Inadequate or insufficient site information (soil test and survey report)	• Before any design scheme, borehole, soil test and survey with the government agencies and nearby buildings should be conducted to ascertain the site conditions and reduce unexpected OHS risks. This can affect the safe progress of excavation, foundation and footing construction.
3.17	Occurrence of disputes	• Encountering any design variations or difficulty in construction, contractors should always discuss with the team and negotiate with the project manager (particularly the representative of the client) about potential changes in the documentation and record the resulting delay of progress in the construction log This will control the discrepancy and variations in the design and construction. • Contract disputes with Local Business Forums may result in project delays. Community engagement through Social Facilitators should be allowed to happen.

		• Poor service delivery protests are also common in Ennerdale and surrounding areas and can result in project delays. News24 of 19 July 2019 reported on protests in the Ennerdale area against land invasion. It was reported to have resulted in business interruptions in the area, “traffic was diverted and many people were prevented from going to work”
3.18	Natural disasters	• Natural disasters are disruptive and can result in damage to buildings under construction and disrupt work schedules. Although the area is not prone to the occurrence of natural disasters, a tornado ripped through Ennerdale in November 2016 causing widespread destruction to homes and buildings. With better weather forecasting, these kinds of risks can be predicted and better controlled.
3.19	Security issues	• Ennerdale is described as a “peaceful area” with a low incidence of crime activities. However isolated incidents of robbery and theft are recorded within the area. Robberies and thefts can result in loss of property, tools, materials and injuries which in turn results in project delays. Adequate security arrangements should be implemented to control the risk.
3.20	Price inflation of construction OHS equipment and materials	• The price of OHS equipment and other OHS compliance requirements is always changing in response to inflation and the relation between supply and demand in the construction market. As this risk is usually unavoidable, the client should choose an appropriate type of pricing contract. • The contractor should avoid using fixed-price contracts to bear the OHS risk. • Add the contingency premium to deal with the potential price fluctuation.

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PROCESS TO APPLY WHEN WORKING ON THE RUNWAY

- Contractor must obtain safety training: **ACSA /Dawid Stuurman Airport** require individuals to complete specific safety induction. This training may include topics such as runway safety, emergency procedures. For access to site two core courses are required which are General Security Awareness (GSA) and Airside Induction Training (AIT).

- Contractor must apply for a Permit: To work on the runway or airside area, you often need to obtain a security Permit. This process typically involves:
  - Completing a background check, which may include criminal history and employment checks.
  - Providing identification and possibly personal references.
  - Providing the AIT and GSA certificates.

- Contractor must submit a work plan and a detailed risk assessment (HIRA, refer to SACAA): **ACSA /Dawid Stuurman Airport must ensure**, contractor submit a detailed work plan. This should outline the scope of work, equipment to be used, safety measures, and how the work will be conducted without disrupting airport operations.
  - HIRA forms part of the submission to SACAA for AIRAC (which notifies pilots of activities to take place at CDSIA and duration).

- Contractor must obtain necessary permits (for personnel, construction permits, equipment permits for airside access etc.): Depending on the scope and nature of the work, additional permits or approvals may be necessary from **ACSA /Dawid Stuurman Airport** authorities.

- Contractor must coordinate with Airport Operations: It's essential to communicate with the airport operations team to schedule your work, ensuring it aligns with airport traffic and operations. Coordination is vital for ensuring safety and minimizing disruption.

- Contractor must follow safety protocols: **ACSA /Dawid Stuurman Airport** will ensure contractor **a**dhere to all safety regulations during the work, including the use of protective equipment and following guidelines for working near aircraft and other vehicles.

- Contractor must maintain communication: Contractor must keep communication open with airport management, and all project team and operations during the project to address any issues that may arise and ensure that safety protocols are being followed.

CONSTRAINTS

Safety Regulations:

- Stringent Safety Protocols: There are strict guidelines set by aviation (**ACSA /Dawid Stuurman Airport)** to ensure the safety of all personnel on the airfield.

Inadequate Budget

- Underestimation of time and budget: Inaccurate time and cost estimations can lead to insufficient resources or an inability to meet deadlines.

Resource Availability

- Resource Availability: Delays can occur due to unavailability or late delivery of necessary resources, including personnel, materials, and technology.

Poor Planning

- Poor Planning: Inadequate project planning, including vague objectives, incomplete timelines, and lack of resources, can lead to unforeseen complications.

Community involvement

- Community involvement conflicts of Interest: Divergent opinions within the community can lead to conflicts that require additional time to resolve, delaying project milestones.
- Dependencies on approval processes: In projects that require formal community approval or input (like public consultations), the wait for feedback or consent can halt progress e.g. appointing community liaison officers and social facilitators etc.

Personal Protective Equipment (PPE)

- Personal Protective Equipment (PPE): Workers are often required to wear specific PPE, including high-visibility clothing, helmets, and ear protection.

Security Requirements:

- Background Checks: Personnel must typically undergo security background checks before gaining airside access, which can delay the project.

Operational Constraints:

- Limited Work Hours: Work on runways may be restricted to specific hours (commonly during off-peak times) to minimize disruptions to flight operations.

- Coordination with Air Traffic Control **ACSA /Dawid Stuurman Airport**: Any work on or near the runway must be carefully coordinated with **ACSA /Dawid Stuurman Airport** to ensure safety and avoid collisions with aircraft.

Weather Conditions:

- Adverse Weather: Work can be severely impacted by weather conditions such as rain, snow, fog, or strong winds, which could endanger workers and aircraft operations.

Environmental Constraints:

- Noise Regulations: Airports often have noise restrictions that need to be adhered to, especially if construction or maintenance activities could produce excessive noise.

Equipment Limitations:

- Specialized Equipment: The type of equipment that can be used may be limited due to runway surface conditions and safety considerations.
- Retrieval and Storage: Equipment must be safely stored and easily retrievable while ensuring it does not obstruct aircraft operations.

Communication Issues:

- Coordination with Multiple Parties: Effective communication is essential with air traffic control, airport operations, and other teams working in the vicinity to ensure safety and compliance.
- Use of Radios: Personnel may need to use specific communication protocols and equipment (such as radios) to maintain contact with **ACSA /Dawid Stuurman Airport** and operational staff.

C3.7.2: ENVIRONMENTAL WORK INSTRUCTIONS

THE ACSA ENVIRONMENTAL SPECIFICATION

It is a requirement of the Airports Company South Africa (ACSA) - that all construction works within ACSA airports be undertaken in accordance with the ACSA Environmental Specification

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LIST OF ABBREVIATIONS

ACSA	Airports Company South Africa
AEC	Airport Environmental Committee
EO	Environmental Officer
ES	Environmental Specification
EMS	Environmental Management System for ACSA
ESA	Environmentally Sensitive Areas
SABS	South African Bureau of Standards
SAHRA	South African Heritage Resource Agency
SSSI	Sites of Special Scientific Interest

AIRPORTS COMPANY SOUTH AFRICA

SECTION 1: ACSA ENVIRONMENTAL SPECIFICATIONS OVERVIEW

1. PURPOSE OF THE ENVIRONMENTAL SPECIFICATIONS

The purpose of the Environmental Specifications (ES) is to translate the recommendations of the Environmental Management System (EMS) into a contractual environmental specification for application during construction activities.

The Environmental Specifications will be applicable to all construction activities that occur on ACSA owned and/or managed airports. Construction activities include construction of buildings, infrastructure as well as developer / tenant property and rehabilitation works at the airport.

2. IMPLEMENTATION OF THE ENVIRONMENTAL SPECIFICATIONS

The Environmental Specifications is intended for dissemination by ACSA to the “Employer”, who is the party for whom the construction works are to be executed (hereafter referred to as the Employer). The Employer may therefore be ACSA (the relevant Departmental Manager responsible for construction activities), a tenant or a developer with a land lease or another party such as a contractor responsible for developing or rehabilitation of the site or sites at the airport.

The Employer shall ensure that the Environmental Specification is included in the Tender Document(s) issued to the prospective Contractor and is also responsible for appointing/designating, in writing, a Responsible Person for the construction works.

The Responsible Person would manage the requirements outlined in the Environmental Specifications on behalf of the Employer. The Contractors shall incorporate the requirements of the ES in their tender submissions to the Employer and are responsible for implementing the ES on a daily basis.

The Environmental Officer (EO) will be responsible for updating the ES as required, auditing the implementation of the ES for each construction project and for maintaining the document control and record systems associated with it.

The Environmental Specifications report has been structured to be incorporated into a standard engineering tender document as the Environmental Particular Specification.

A ‘Particular Specification’ is the terminology used for a specification that covers activities that are not adequately covered in the standardised SABS 1200 series specifications for engineering contracts, or

where the specification is sufficiently detailed to make it inappropriate for inclusion as a variation or addition to a standardised specification.

The Environmental Specification is a generic document applicable to construction projects at all ACSA airports. The majority of the specifications within the ES will apply to all construction work, although it is anticipated that variations to this specification may need to be included for some specific developments. Variations would be made by the Environmental Officer, prior to the issue of the ES to the Employer.

SECTION 2: ENVIRONMENTAL PARTICULAR SPECIFICATIONS

The ECO Appointment is still ongoing and an EMPr shall be issued to the Contractor.

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C3.7.3: REQUIREMENTS OF GOVERNMENT'S PROGRAMME FOR BROAD-BASED BLACK EMPOWERMENT

C3.7.3.1 SCOPE

1. GOVERNMENT POLICY

There is a compelling need to elevate development of previously disadvantaged individuals and enterprises, and leadership by ACSA is required to establish the framework for the development of previously disadvantages individuals and enterprises. (based on CIDB NCDP 2011).

The objective of the NCDP is to promote equity ownership across the different contracting categories and grades, as well as improving skills and performance in the delivery and maintenance of capital works across the public sector.

2. APPLICABLE LEGISLATION

All tenders will be considered with specific reference to applicable legislation in force from time to time and which are specifically applicable to organs of state for example the following:-

2.1 Public Finance Management Act No. 1 of 1999;
2.2 Preferential Procurement Policy Framework Act No. 5 of 2022;
2.3 The Constitution of South Africa
2.4 Broad-Based Black Economic Empowerment Act No. 53 of 2003
2.5 National Small Business Amendment Act No. 26 of 2003

C3.7.3.2 DEFINITIONS

1)	**BBBEE**	Broad-Based Black Economic Empowerment
2)	**BO**	Black Owned
3)	**BWOYO**	Black Woman Owned, Youth Owned
4)	**CIDB**	Construction Industry Development Board
5)	**CPG**	Contract Participation Goals
6)	**EME**	Exempted Micro Enterprise
7)	**ISO**	Quality management systems standards
8)	**JV**	Joint Venture
9)	**NCDP**	National Contractors Development Programme
10)	**PPPFA**	Preferential Procurement Policy Framework Act
11)	**PWPDO**	Persons with Physical Disability Owned
12)	**SADC**	Southern African Development Community
13)	**PPM**	Project Portfolio Management

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TABLE A

Size	Total Gross asset value (fixed property excluded) (less than)	Total annual turnover (less than)	Total full time equivalent of paid employees (less than)
Medium	R 5 m	R 26 m	200
Small	R 1 m	R 6 m	50
Very Small	R 0.5 m	R 3 m	20
Micro	R 0.1 m	R 0.2 m	5

C3.7.3.3 CONTRACT PARTICIPATION

Airports Company South Africa aims to contract predominantly with Empowering Suppliers per the definition in P010 004P (ACSA internal transformation policy) were this relates to:

- An increase in local production,
- Raw material beneficiation
- Retention and employment of black people
- The transfer of skills to black owned EME's and QSE's.

1. Contract Participation Goals (CPG)

   CPG refers to the extent to which the contracted resources achieve predetermined transformation objectives, expressed as a percentage (%) of the contract value. Bidders are expected to achieve this target by the end of the project. CPG for this contract is 30%.

2. Bidders are to submit to submit a transformation proposal meeting the CPG target for this contract.

3. 30% of the contract amount will be allocated to enterprises that are women owned, youth owned, PWPDO, or allocate to EME, QSE that are 51% black owned entities.

4. To facilitate achievement of target set out in 3, and transfer of skills, the tenderer **must** subcontract a minimum of **5%** of the contract value to CIDB Grade 1 to 6 CE contractors that are women owned, youth owned, PWPDO, or allocate to EME, QSE that are 51% black owned entities.

   This is in line with the Standard for Indirect Targeting for Enterprise Development through Construction works Contracts, published in Gazette Notice No. 36190 of 25 February 2013.

5. In the event that the Contractor/consultant fails to substantiate that any failure to achieve the contract participation goal relating to the granting of a preference was due to quantitative underruns, the elimination of items, or any other reason beyond the Contractor's control which may be acceptable to the Employer, the Contractor/Consultant shall be liable to pay to the Employer a financial penalty calculated in the following manner:

P = (0,15 x (D – Do) x CA)/100

vi. Where D is the tendered contract participation goal percentage;
vii. Do is the contract participation goal which the Employer's representative, certifies based on the credits passed, as being achieved upon completion of the contract;
viii. CA is the contract amount.
ix. P is the monetary value of penalty payable

No financial award is due for over performance on CPG.

6. Acceptance

I/We _____ acknowledge that I/we have read and understood the contents of this section and we affirm our commitment to achieve the Contract Participation Targets per form A12 of this document.

Signed:…….. Date: ……

Name: …….. Position: ……

Tenderer:

……

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Transformation score sheet (C3.7.3.3(6))

(Only Populate the white blocks/cells)

Ownership target 51%	Method 1	% of contract executed by prime contractor	% Black Ownership	Total CPG Element	Weightir CPG	Contract CPG
	Method 2	% contract being executed by targeted JV Partners	% Black Ownership		40%	
	Method 3	% on contract being executed by targeted subcontracto	% Black Ownership			
Management target 51	Method 1	% of contract executed by prime contractor	% Black Management	Total CPG Element	Weighting	
	Method 2	% contract being executed by targeted JV Partners	% Black Management		40%	
	Method 3	% on contract being executed by targeted subcontracto	% Black Management			
Skills Development				Total CPG Element	Weighting	
	Method 2	% contract being executed by targeted JV Partners	% Black Management		5%	
	Method 3	% on contract being executed by targeted subcontracto	% Black Management			
ESD				Total CPG Element	Weighting	
	Method 2	% contract being executed by targeted JV Partners	% Black management		10%	
	Method 3	% on contract being executed by targeted subcontracto	% Black management			
SED				Total CPG Element	Weighting	
	Method 2	% contract being executed by targeted JV Partners	% Black Management		5%	
	Method 3	% on contract being executed by targeted subcontracto	% Black management			
				CPG Score:		

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C3.7.4: REQUIREMENTS OF THE CIDB BUILD PROGRAME

The contractor shall achieve in the performance of the contract the Contract Skills Development Goals (CSDG) as stated in the Standard for Developing Skills through Infrastructure Contracts (Published in GN 43495 of 20 March 2020)

CSDG shall be achieved in the performance of a contract in relation to the provision of different types of workplace opportunities linked to work associated with a contract which culminate in or lead to:

a) **Method 1:** a part- or full occupational qualification registered on the National Qualification Framework;
b) **Method 2:** a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012);
c) **Method 3:** a national diploma registered on the National Qualification Framework; and
d) **Method 4:** registration in a professional category by one of the professional bodies listed in the standard.

This section shall be read concurrently with the Standard for Developing Skills through Infrastructure Contracts (Published in GN 43495 of 20 March 2020). The contractor shall comply with the provisions of the Standard for Developing Skills through Infrastructure Contracts for the contract duration.

The Construction Skills Development Goal shall be a minimum of 0.25% of the contract value for this contract. The contractor shall make use of the table below in preparing a proposal on how the CSDG will be met in this contract.

PC 1.2.12 in the build of quantities has been allowed in the bill of quantities for CSDG over a period of 12 Months. This item is a time related item and shall be paid out monthly for over the contract duration.

The table below shall be used by the Contractor to propose the method in which the CSDG will be met. In the event of the Contractor failing to meet the relevant requirements and goals, the Contractor will be penalised as detailed in Item 5 of C3.7.3.3 above.

Skills Types	Number of Learners	*Notional Cost/ Learner/ Quarter (Rand)	Notional Cost /learner/ year (Rand)	Total Notional Cost over 12 Months Contract (Rand)
Method 1: a part- or full occupational qualification registered on the National Qualification Framework;				
Method 2: a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012);				
Method 3: a national diploma registered on the National Qualification Framework;				
Method 4: registration in a professional category by one of the professional bodies listed in the standard.				

Total Cost (Cost of CSDG)	
CSDG Score % (Total cost of CSDG/Contract value Excluding VAT)	

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C3.7.5: STAKEHOLDER/ COMMUNITY ENGAGEMENT & TARGETED LABOUR

1) Project Liaison Officer (PLO)/ Community Liaison Officer (CLO)

The Project Liaison Officer (PLO)/ Community Liaison Officer (CLO) shall be appointed by the Engineer during the construction period. The PLO shall facilitate the selection and employment of Targeted Labour and coordinate communication between the project team, the members of the community and other relevant stakeholders. The PLO shall also be involved in the subcontracting processes. Although the PLO predominantly provides social facilitation support to the Contractor, the PLO shall report to the Engineer or his delegated representative, e.g. the Resident Engineer.

Duties of the PLO

i) Schedule meetings;
ii) Compile meeting agendas;
iii) Compile document packages for meetings;
iv) Distribute minutes of meetings;
v) Assist representatives of project Stakeholders and affected Community to formulate their communications in writing;
vi) Distribute written communication between the parties
vii) Attend all monthly project site meetings to report on the day to day project, Stakeholder and Community matters that impact on the parties to the PLC.
viii) Attend any other meetings related to the project and in which any of the project Stakeholders, affected Communities, Targeted Labour and Targeted Enterprises are involved.
ix) Maintain a full-time presence on site to monitor and address the day-to-day project, Stakeholder and Community matters that impact on the parties
x) Maintain a full-time presence on site to assist the parties to the PLC in the day to day liaison with each other.
xi) Assist the Engineer and the Contractor to disseminate information to members
xii) Assist to establish and agree the criteria to be followed when selecting and employing Targeted Labour.
xiii) Assist the Engineer and the Contractor in their resources and skills audits by providing a coordinating function between the Engineer, the Contractor, project Stakeholders, and the affected Communities.
xiv) Ensure that Targeted Labour databases are compiled based on the agreed eligibility and selection criteria and that it is updated as and when required.
xv) Coordinate the selection and employment of Targeted Labour based on the agreed eligibility and selection criteria and based on the Contractor's labour and skills requirements.
xvi) Ensure that each Targeted Labourer enters into an employment contract which adheres to current and relevant Labour legislation.
xvii) Ensure that each Targeted Labourer understands the conditions of his/her employment contract with an emphasis on the employment start date, end date and wages payable.
xviii) Identify and inform the Contractor of any relevant training required by the Targeted Labour.
xix) Attend all disciplinary proceedings to ensure that hearings are fair and conducted in accordance to the current and relevant Labour legislation.
xx) Be proactive in identifying project Stakeholder and affected Communities' (including Targeted Labour and/or Targeted Enterprise Subcontractor), requirements, disputes, unrest, strikes, etc. and bring it to the attention of the project team
xxi) Other than the document records to be kept as mentioned above, keep record of all other documents and processes pertaining to the employment of Targeted Labour.
xxii) Produce and submit a monthly reports

xxiii) Purpose of Stakeholder and Community Liaison

To give effect to the need for transparency and inclusion in the process of delivering services, the Contractor shall liaise with the project Stakeholders and affected Communities for the duration of the Contract's life cycle. This shall be achieved through structured engagements facilitated by the PLO/ CLO.

2) Stakeholders

Any Stakeholder listed in the Employer's Communication Policy who is affected by the Employer's operations in the Project Area(s) and/or who has an interest or concern in the project, either as a decision maker, participant or affected party and may include, amongst others, the following entities:

i) Relevant Provincial departments;
ii) Relevant Municipal departments;
iii) Traditional authorities;
iv) Community interest groups;
v) Organised youth representation;
vi) Organised women representation;
vii) Organised disabled people representation;
viii) Other structured community groups such as religion, education, farming, etc.
ix) Local transport industry forums, e.g. Bus and taxi;
x) Business sector forums;
xi) Road user forums;
xii) Environmental interest groups;
xiii) Road safety interest groups;
xiv) Any other recognised relevant and representative structure

3) Contractor's Responsibilities in Stakeholder and Community Liaison

The Contractor shall have the following general responsibilities in the Stakeholder and Community liaison process:

a) Stakeholder and Community engagement shall be executed based on the good social facilitation principles and processes.
b) The Contractor shall make use of the PLO as the official communication channel and utilise it to facilitate harmonious relationships, with project Stakeholders and affected Communities.
c) The Contractor shall provide the PLO with any assistance and information that it requires to execute his/her duties, which amongst others, include training, providing a meeting venue on site, provide Target Group reports, etc.

4) Local community engagement

It is a requirement for this contract for the contractor to engage with the local community through the services of the provisioned PLO, and where possible employ and use local labour to execute the works. It is the Main Contractors prerogative to decide which portions of the work will be

executed by labour from the local community. The adjacent communities (mainly Walmer Township and others) must be prioritised in the appointment of local labour.

5) Employment of SMME Subcontractors

It is a requirement for this contract that 30% of the contract sum be sub-contracted in this process priority should be given to local SMME sub-contractors. When calculating the SMME value for the works the contract sum will exclude the following:

- Preliminaries
- Contingencies
- Value Added Tax

It is the Main Contractors prerogative to decide which portions of the work will be executed by SMME sub-contractors.

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PART C4: SITE INFORMATION

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED

CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

PROJECT No: 4429

Contents: **No of pages**

AIRPORTS COMPANY SOUTH AFRICA SOC LIMITED
CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
REHABILITATION OF RUNWAY 08/26 AND TAXIWAYS AT CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT

C4: SITE INFORMATION

C4.1. SCOPE AND DISCLAIMERS

The information contained in Part C4 is intended as an indication of the conditions likely to be encountered. All drawings, opinions, interpretations and suggested working methods given in this volume must be regarded as a guide. The results are given in good faith but no warranty is given that the information is representative of the entire airport or route, and no responsibility will be accepted for any consequence arising from actual conditions being different from those indicated in this volume.

This tender applies to the (a) Skills Development Standard. Although in the case of this standard there are no returnable documents, tenderers are sensitised that the proforma documents as listed below, shall be completed by the successful contractor after award of the contract within the stipulated period. (The proforma documents are provided in the tender data for information purposes only).

PRO-FORMA DOCUMENTS

Form A 1 List of Recognised Skills Development Agencies
Form A 2 Baseline Training Plan
Form A 3 Project Interim Report
Form A 4 Supervisor Agreement
Form A 5 Project Completion Report (CSDG)

Form A 2 Baseline Training Plan

CIDB SKILLS STANDARD

BASELINE TRAINING PLAN

Contractor Details						
Contractor Name:						
CRS Number:						
Estimated start date						
Estimated Completion date						
Size of Organisation	Small (1-49 employees)		Medium (50-149 employees)		Large (≥150 employees)	

Contractor Contact Details	
Name of Contact Person	
Designation of Contact Person	
Contact Details	Cell Number:
	Landline Number:
	Email address:

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Construction Skills Development Goal (CSDG) Baseline Training Plan					
Training Method	Number of Employed Learners	Number of Unemployed Learners	Area/s of Specialisation/Trade	Duration of Placement	Total Notional Cost
Total					

Note: Refer to Table 3 in the Standard for Developing Skills through Infrastructure Contracts Government Gazette 43495 of 3 July 2020 for the notional costs

Contractor's Representative

Name: _____ Designation: _____

Signature: _____ Date: _____

Employer's Representative

Name: _____ Designation: _____

Signature: _____ Date: _____

AIRPORTS COMPANY SOUTH AFRICA

Form A 3 Project Interim Report

cidb PROJECT ASSESSMENT SCHEME: STANDARD FOR DEVELOPING SKILLS
PROJECT INTERIM TRAINING REPORT

Section A: Employer Information

cidb Employer Number	
Employer Name	

Section B: Contract Data

cidb Contract Number	
Contract Title	
Tender Value (R)	
Contract Skills Development Goal (R)	
SIP Number (If Applicable)	
SIP Project Code (If Applicable)	

Definitions:

Training Methods:
Method 1: structured workplace learning opportunities for learners towards the attainment of a part or a full occupational qualification;
Method 2: structured workplace learning opportunities for apprentices or other artisan learners towards the attainment of a trade qualification leading to a listed trade subject to at least 60% of the artisan learners being holders of public TVET college qualifications;
Method 3: work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diplomas;
Method 4: structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 above

Learner/Candidates Full Name and Surname	Gender		Ethnic Group					Identity Number														Training Method (Please tick)				Placement Start Date	Placement End Date	Occupation Description	Description of Practical Task Completed (as per logbook or POE)	Status	Supporting documents available on request (Please tick)						
	Male	Female	Black	White	Coloured	Indian	Other															M1	M2	M3	M4						Learner Training Plan	Attendance Register	Signed Logbooks/POE	Medical Assessments	Induction	Health and Saftey Training	PPE Register
Eg. Joe Smith	1				1			1	2	3	4	5	6	7	4	5	6	8	9	1			X			01 May 2016	31 May 2016	Bricklaying	Read and interpret drawings Set out building as per drawing Transfer leves using dumpy level Batch and mix concrete	Completed In progress In progress Completed	x	x	x	x	x	x	x

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Form A 4 Supervisor Agreement

Form A4: cidb PROJECT ASSESSMENT SCHEME: STANDARD FOR DEVELOPING SKILLS
SUPERVISOR/MENTOR DETAILS

SECTION A: Personal details

Surname	
Name	
ID Number	
e-mail	
Mobile	0 - -
Office Telephone	0 - -

SECTION B: Professional profile

Designated Trade	
Registration Number	
Professional registration	
Professional council	
Category	
Registration number	

SECTION C: General comments

AIRPORTS COMPANY SOUTH AFRICA

Form A 5 Project Completion Report (CSDG)

Form A5: cidb PROJECT ASSESSMENT SCHEME: STANDARD FOR DEVELOPING SKILLS
PROJECT COMPLETION REPORT

Section A: Contractor / JV Information

cidb Contractor Registration Number of main / lead contractor

Name of contractor /Joint Venture

Contact Person Title Initials Surname

Designation

e-mail

Mobile 0 - -

Office Telephone 0 - -

Section B: Employer Information

cidb Employer Number

Employer Name

Section C: Contract Data

cidb Contract Number

Contract Title

Date of Completion Y Y Y Y - M M - D D

Tender Value R . 0 0

Section D: Approved Exemptions and Variations Granted

Section E: Budgeted Training Costs

GB	0,50% x Tender Value =	R	. 0 0
CE	0,25% x Tender Value =	R	. 0 0
CE & GB	0.375% x Tender Value =	R	. 0 0
EB	0,25% x Tender Value =	R	. 0 0
EP	0,25% x Tender Value =	R	. 0 0
ME	0,25% x Tender Value =	R	. 0 0
SW	0,25% x Tender Value =	R	. 0 0

Section F: Actual Training Costs Achieved

Actual training costs achieved R . 0 0

CSDG achieved Yes No

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C4.2. SITE DESCRIPTION

C4.2.1 General

The general locality of the main facilities is indicated in the diagram below:

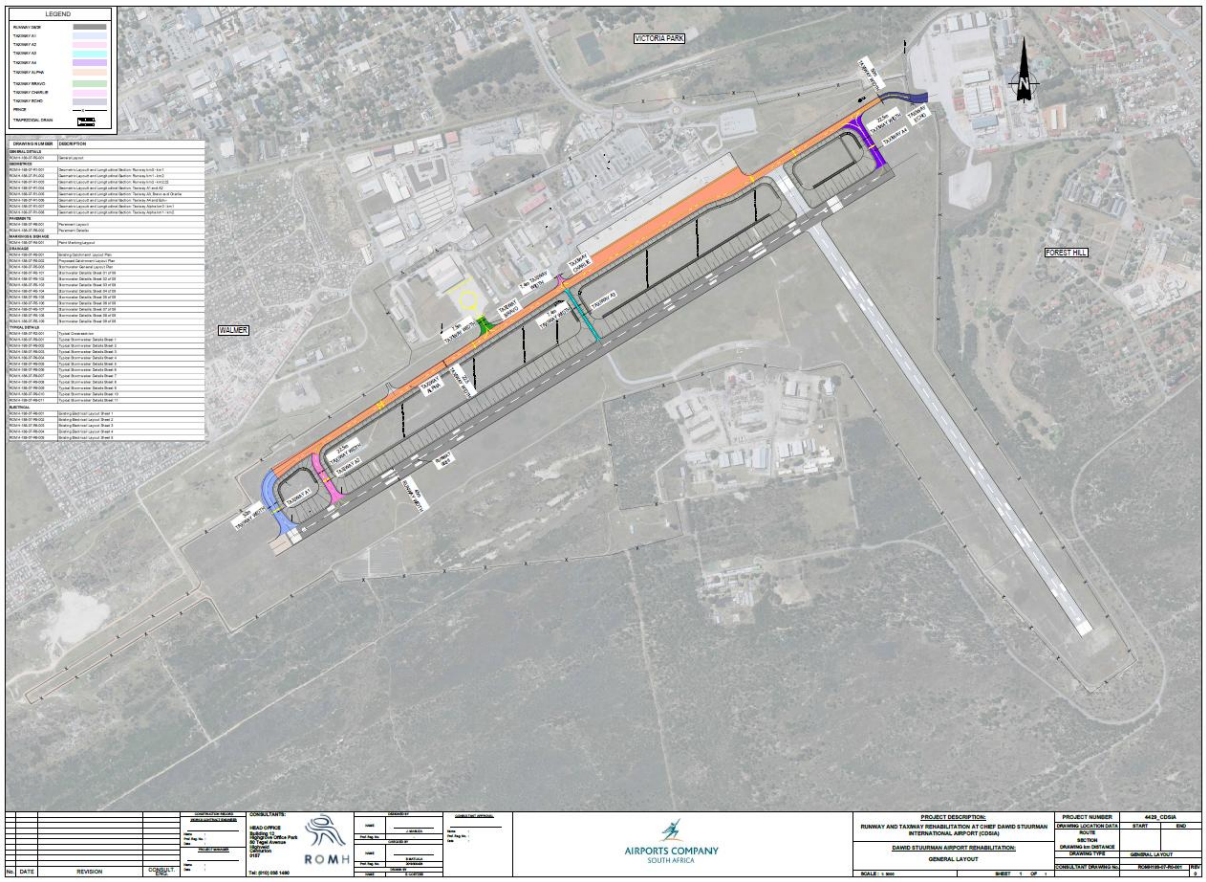

Figure 4.2.1: General Layout

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C4.3 CLIMATE DATA

Rainfall data for the Port Elizabeth weather station is summarised in Figure 4.3.2. The mean annual precipitation (MAP) is 624 mm, and approximately 74% of this rain occurs between March and October where the average monthly rainfall ranges from 47 mm to 64 mm. The least amount of rain falls in the summer months, where the average ranges between 34 and 40 mm from December to February. Climate data is presented in the figures below.

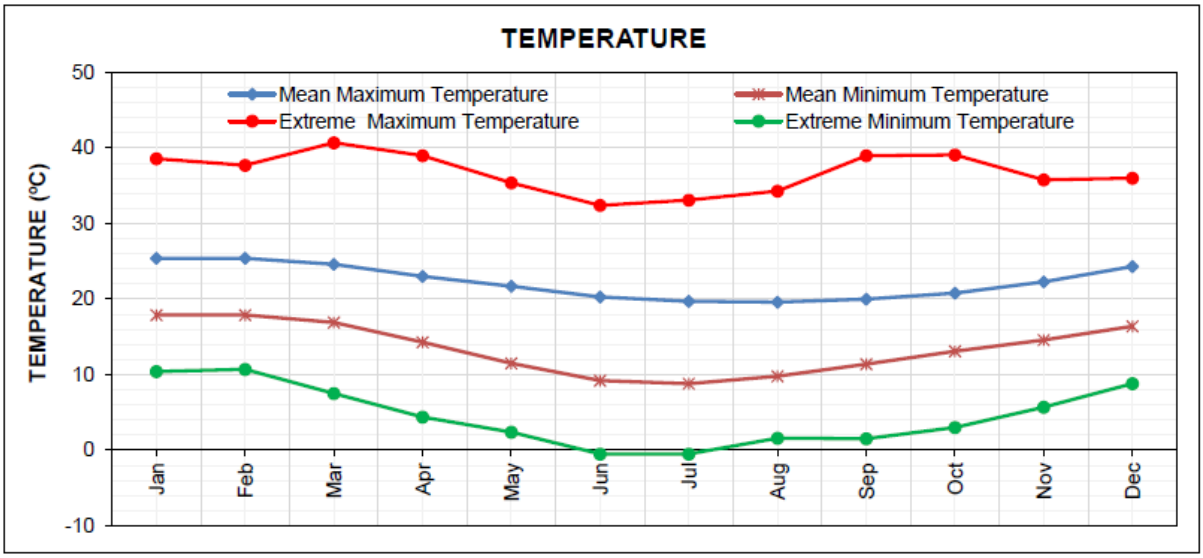

Figure 4.3.1: Average monthly air temperatures

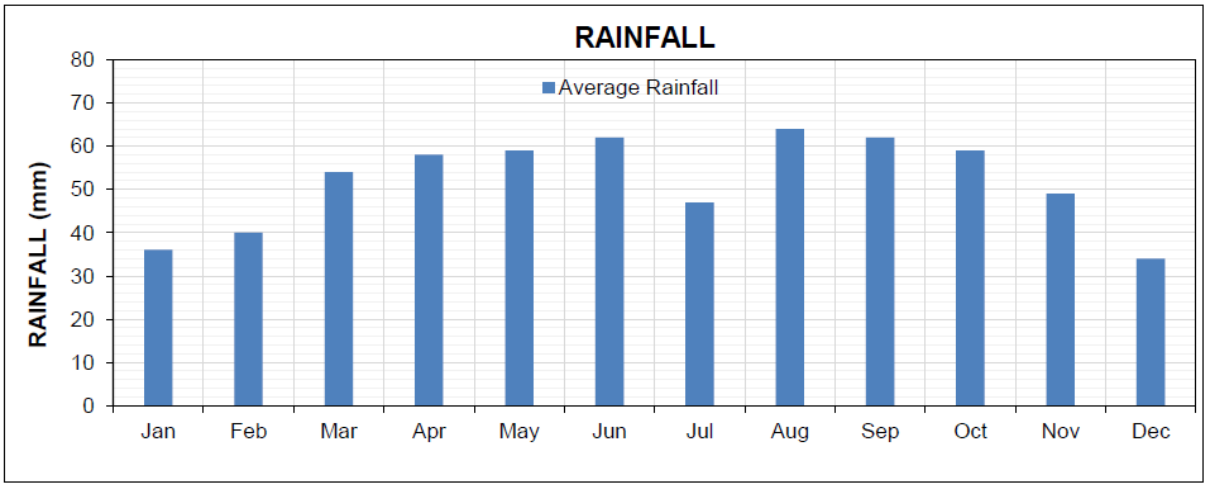

Figure 4.3.2: Long Term Average and maximum 24hr monthly rainfall

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C4.4 CONSTRUCTION CONSTRAINTS AND ENVIRONMENTAL CONDITIONS

The following climatic aspects are of significance to the construction and performance of the asphalt work and others:

- During the summer, rainfall occurs mostly in the form of high intensity thunderstorms, the month that should have the least disruption on construction activities is October to March. The rest of the month's rain delays can be expected with the highest delays in June to October.

- Asphalt temperatures cool very rapidly when being placed during days when the temperature drops to below -1°C and, it might be difficult to achieve effective compaction of thin asphalt and surfacing layers. Bitumen's are also sensitive for these conditions with possible stripping of stone particularly for night work during the winter months.

It is undesirable to construct the asphalt in very cold weather, which highlights the importance of planning the works to be minimal in months May, June, July and August as previously mentioned, asphalt premix work will be severely constrained with the minimum temperature falling below 5°C.

- Very low temperatures increase the stiffness of asphalt mixes and also the brittleness of the mixes. This can lead to early fatigue and shrinkage cracking if design principles are ignored.

- Consistently high air temperatures (> 25°C,) during the summer can result in the softening of the asphalt leading to rutting (deformation) in the upper asphalt under slow moving (creep load) with high tyre pressures. Special attention needs to be given to asphalt and bitumen properties, considering the choice of binder and mix stability.

The Contractor should note that the project site is located within a windy city, which could impact the execution of certain works during bad windy weather.

C4.5 RESTRICTED ACCESS TO THE SITE OF THE WORKS

C4.5.1 Restricted Areas

The contractor will have restricted access to the works at any given time because simultaneous closure of the runway and taxiways during normal operational hours will not be permitted.

Although the entire site will be handed to the Contractor at the start of the contract, the airport manager and the air traffic controller have the right to decide at short notice where on the site the Contractor may work. Works on all Runways, Aprons and Taxiways will remain operational and has access on the runway. Therefore, it is compulsory for the Contractor to complete the portion of surfacing milled for the night shift the same night and to allow normal air-traffic for the next day. The Runway and Taxiways cannot be shut down, since this is an operational site. The secondary runway has been temporarily closed down for any operations and thus cannot be used for any landings or takeoffs.

C4.5.2 Access Point and Routes

The designated access point for plant and personnel will be provided to the contractor through the use of the main gate. The contractor should appoint personnel who will have all the necessary licences to speak to the tower.

Construction material must be delivered via the gate to the site camp on ly at night, else if it is delivered during the day a landside area will be made available for these deliveries. The Contractor shall erect, maintain, move and finally remove temporary barriers, fences, signs and markings, all as prescribed by the airport authorities. The Contractor shall ensure that all barricades, markers and signs are placed under escort, prior to entering a work area for construction purposes.

Movement outside the areas demarcated for construction shall not be permitted, unless special arrangements have been made and approved by the AM.

AIRPORTS COMPANY SOUTH AFRICA

C4.6 TRAFFIC

A straight-line simplification of the rebound is done here simply to provide the traffic figures for pavement design calculation some form of normalcy with a steady growth rate.

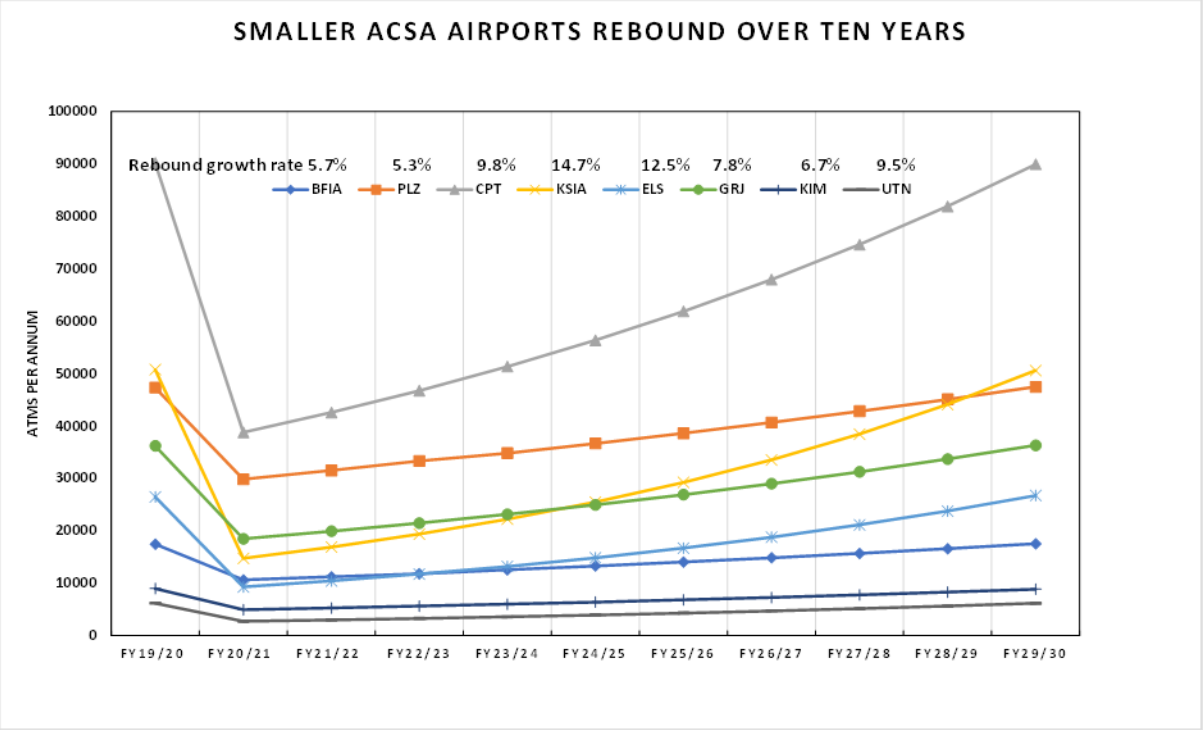


Figure 4.6.1: Rebound modelling of ATMs of smaller 8 ACSA airports

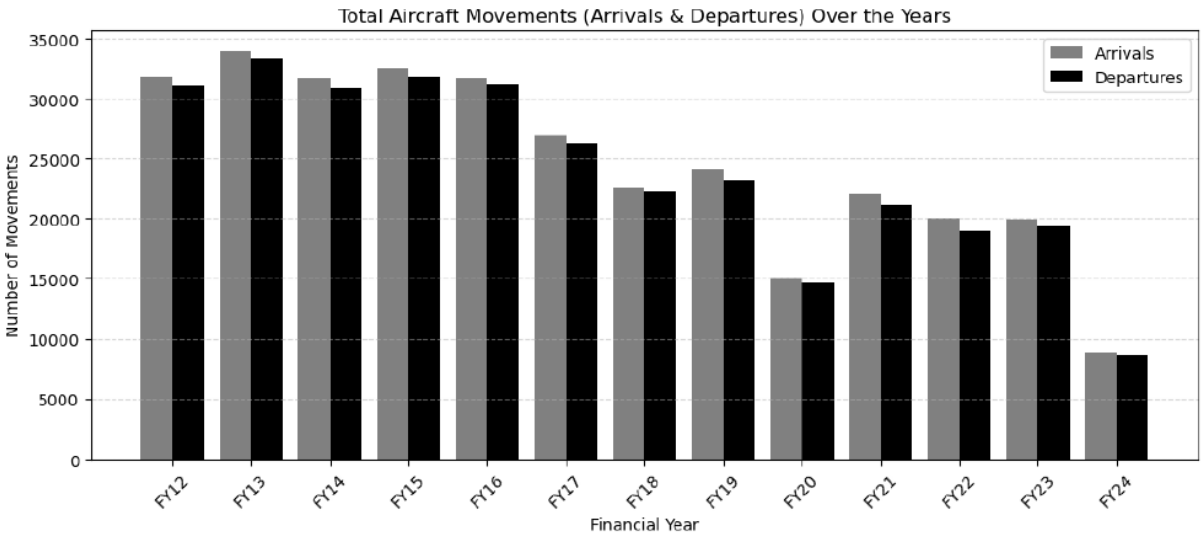
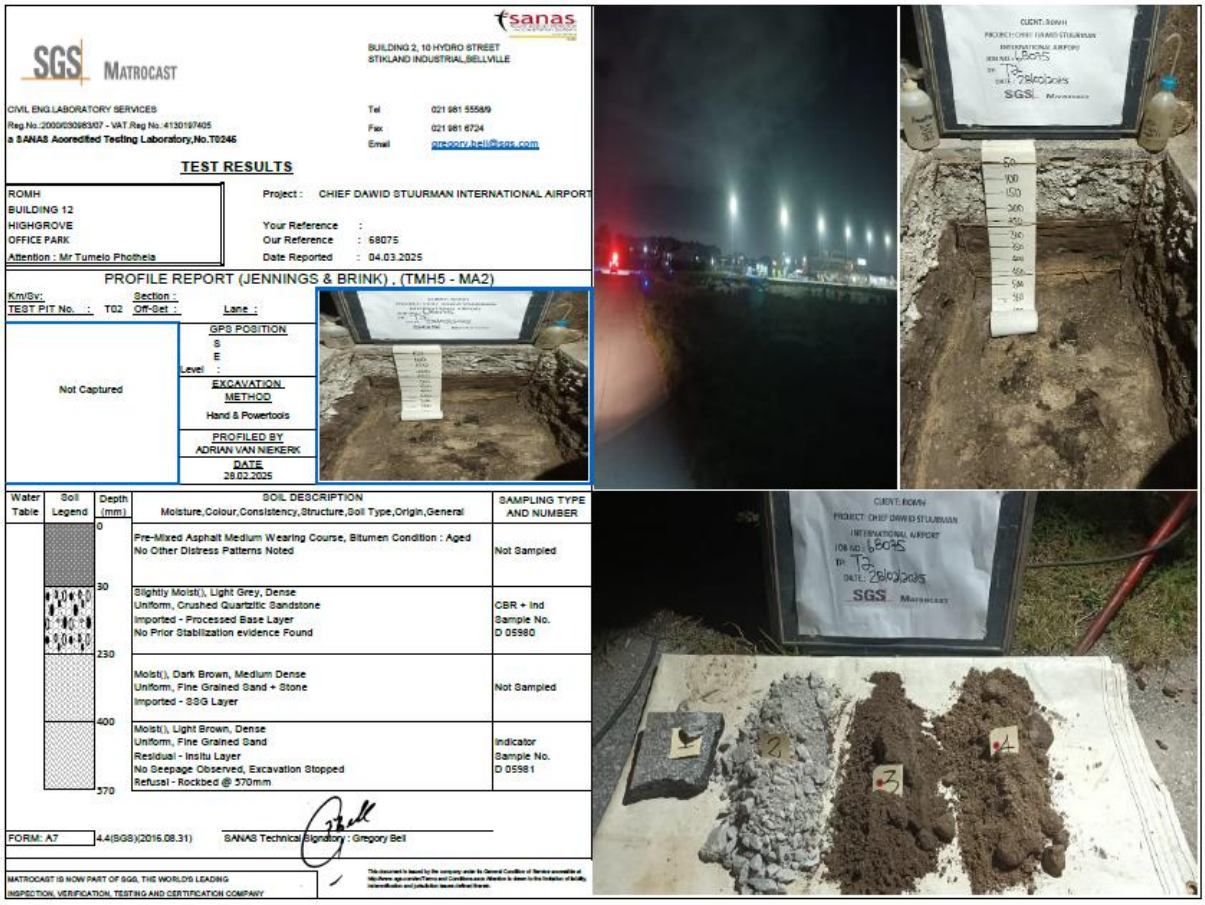


Figure 4.6.2: Total Aircraft movements since 2012 to 2024

C4.7 EXISTING PAVEMENT PROFILE AND MATERIAL CLASSIFICATION

The test-pit profiles and material descriptions are shown in **Error! Reference source not found.**4.7.1 to 4.7.6 and Table 4.7.1. The test pit material profiles are shown for Runway 08/26, the Taxiways and the General aviation area.

The observed existence of wetness/moistness in the pavement layers is an indication of a poor subdrainage systems which is not effective in ensuring protection of layer works against water ingress.



SGS MATROCAST

BUILDING 2, 10 HYDRO STREET
STIKLAND INDUSTRIAL,BELLVILLE

CIVIL ENG.LABORATORY SERVICES
Reg.No.:2000/030983/07 - VAT Reg No.:4130197405
a SANAS Accredited Testing Laboratory,No.T0246

Tel 021 981 5558/9
Fax 021 981 6724
Email gregory.bell@sgs.com

TEST RESULTS

ROMH
BUILDING 12
HIGHGROVE
OFFICE PARK
Attention : Mr Tumelo Phothela

Project : CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
Your Reference :
Our Reference : 68075
Date Reported : 04.03.2025

PROFILE REPORT (JENNINGS & BRINK) , (TMH5 - MA2)

Km/Sv: Section :
TEST PIT No. : T02 Off-Set : Lane :

Not Captured

GPS POSITION
S
E
Level :

EXCAVATION METHOD
Hand & Powertools

PROFILED BY
ADRIAN VAN NIEKERK

DATE
28.02.2025

Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture,Colour,Consistency,Structure,Soil Type,Origin,General	SAMPLING TYPE AND NUMBER
		0	Pre-Mixed Asphalt Medium Wearing Course, Bitumen Condition : Aged No Other Distress Patterns Noted	Not Sampled
		30	Slightly Moist(), Light Grey, Dense Uniform, Crushed Quartzitic Sandstone Imported - Processed Base Layer No Prior Stabilization evidence Found	CBR + Ind Sample No. D 05980
		230	Moist(), Dark Brown, Medium Dense Uniform, Fine Grained Sand + Stone Imported - SSG Layer	Not Sampled
		400	Moist(), Light Brown, Dense Uniform, Fine Grained Sand Residual - Insitu Layer No Seepage Observed, Excavation Stopped Refusal - Rockbed @ 570mm	Indicator Sample No. D 05981
		570		

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Figure 4.7.1

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STIKLAND INDUSTRIAL,BELLVILLE

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Fax 021 981 6724
Email gregory.bell@sgs.com

TEST RESULTS

ROMH
BUILDING 12
HIGHGROVE
OFFICE PARK
Attention : Mr Tumelo Phothela

Project : CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
Your Reference :
Our Reference : 68075
Date Reported : 04.03.2025

PROFILE REPORT (JENNINGS & BRINK) , (TMH5 - MA2)

Km/Sv:
TEST PIT No. : G1 Section :
Off-Set : Lane :

GPS POSITION
S
E
Level :

EXCAVATION METHOD
Hand & Powertools

PROFILED BY
ADRIAN VAN NIEKERK

DATE
01.03.2025

Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture,Colour,Consistency,Structure,Soil Type,Origin,General	SAMPLING TYPE AND NUMBER
		0	Pre-Mixed Asphalt Medium Wearing Course, Bitumen Condition : Aged No Other Distress Patterns Noted	Not Sampled
		40	Moist(), Orange Brown, Dense Uniform, Crushed Quartzitic Sandstone Imported - Processed Base Layer Evidence of Stabilization and Frothing Observed In Layer	CBR + Ind Sample No. D 05984
		220	Moist(), Dark Brown, Dense Uniform, Fine Grained Sand Imported - SSG Layer No Seepage Observed Excavation Stopped, Refusal - Concrete Base @ 800mm	Indicator Sample No. D 05985
		800		

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Figure 4.7.2

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Date Reported : 04.03.2025

PROFILE REPORT (JENNINGS & BRINK) , (TMH5 - MA2)

Km/Sv:
TEST PIT No. : R1 Section :
Off-Set : Lane :

GPS POSITION
S
E
Level :

EXCAVATION METHOD
Hand & Powertools

PROFILED BY
ADRIAN VAN NIEKERK

DATE
01.03.2025

Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture,Colour,Consistency,Structure,Soil Type,Origin,General	SAMPLING TYPE AND NUMBER
		0	Pre-Mixed Asphalt Medium Wearing Course, Bitumen Condition : Aged No Other Distress Patterns Noted	Not Sampled
		30	Intact, Bituminous Treated Basecourse Layer, Bitumen Condition : Tacky,	Not Sampled
		150	Intact, Bituminous Treated Basecourse Layer, Bitumen Condition : Tacky,	Not Sampled
		250	Moist(), Olive, Very Dense Uniform, Coarse Crushed Quartzitic Sandstone Imported - Processed Subbase Layer No Evidence of Stabilization Observed, Frothing Observed In Layer	CBR + Ind Sample No. D 05982
		500	Moist(), Brown, Dense Uniform, Fine Grained Sand Residual - Insitu Layer, No Seepage Observed Excavation Stopped, Target Depth Reached	Indicator Sample No. D 05983
		1000		

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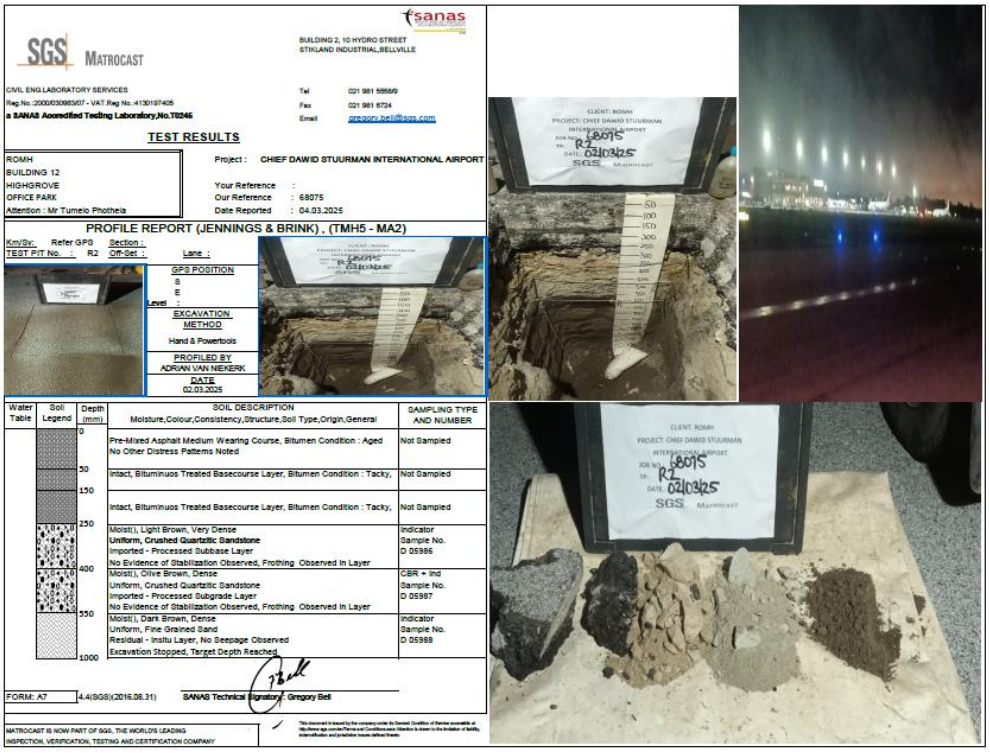
Figure 4.7.3



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Your Reference :
Our Reference : 68075
Date Reported : 04.03.2025

PROFILE REPORT (JENNINGS & BRINK) , (TMH5 - MA2)

Km/Sv: Refer GPS Section :
TEST PIT No. : R2 Off-Set : Lane :

GPS POSITION
S
E
Level
EXCAVATION METHOD
Hand & Powertools
PROFILED BY
ADRIAN VAN NIEKERK
DATE
02.03.2025

Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture,Colour,Consistency,Structure,Soil Type,Origin,General	SAMPLING TYPE AND NUMBER
		0	Pre-Mixed Asphalt Medium Wearing Course, Bitumen Condition : Aged No Other Distress Patterns Noted	Not Sampled
		50	Intact, Bituminuos Treated Basecourse Layer, Bitumen Condition : Tacky,	Not Sampled
		150	Intact, Bituminuos Treated Basecourse Layer, Bitumen Condition : Tacky,	Not Sampled
		250	Moist(), Light Brown, Very Dense Uniform, Crushed Quartzitic Sandstone Imported - Processed Subbase Layer No Evidence of Stabilization Observed, Frothing Observed In Layer	Indicator Sample No. D 05986
		400	Moist(), Olive Brown, Dense Uniform, Crushed Quartzitic Sandstone Imported - Processed Subgrade Layer No Evidence of Stabilization Observed, Frothing Observed In Layer	CBR + Ind Sample No. D 05987
		550	Moist(), Dark Brown, Dense Uniform, Fine Grained Sand Residual - Insitu Layer, No Seepage Observed Excavation Stopped, Target Depth Reached	Indicator Sample No. D 05988
		1000		

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Figure 4.7.4

SGS MATROCAST

BUILDING 2, 10 HYDRO STREET
STIKLAND INDUSTRIAL,BELLVILLE

CIVIL ENG.LABORATORY SERVICES
Reg.No. 2000/030983/07 - VAT Reg No. 4130197405
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TEST RESULTS

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OFFICE PARK
Attention : Mr Tumelo Phothela

Project : CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
Your Reference :
Our Reference : 68075
Date Reported : 04.03.2025

PROFILE REPORT (JENNINGS & BRINK) , (TMH5 - MA2)

Km/Sv: Refer GPS Section :
TEST PIT No. : R3 Off-Set : Lane :

Not Captured

GPS POSITION
S
E
Level
EXCAVATION METHOD
Hand & Powertools
PROFILED BY
ADRIAN VAN NIEKERK
DATE
02.03.2025

Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture,Colour,Consistency,Structure,Soil Type,Origin,General	SAMPLING TYPE AND NUMBER
		0	Pre-Mixed Asphalt Medium Wearing Course, Bitumen Condition : Aged No Other Distress Patterns Noted	Not Sampled
		50	Intact, Bituminuos Treated Basecourse Layer, Bitumen Condition : Tacky	Not Sampled
		150	Intact, Bituminuos Treated Basecourse Layer, Bitumen Condition : Tacky	Not Sampled
		250	Moist(), Orange Brown, Very Dense Uniform, Crushed Quartzitic Sandstone Imported - Processed Subbase Layer No Evidence of Stabilization Observed, Frothing Observed In Layer	Indicator Sample No. D 05989
		300	Moist(), Grey, Very Dense Uniform, Crushed Quartzitic Sandstone Imported - Processed Subgrade Layer No Evidence of Stabilization Observed, Frothing Observed In Layer	CBR + Ind Sample No. D 05990
		500	Moist(), Dark Brown, Dense Uniform, Fine Grained Sand, Residual Insitu Layer,No Seepage Observed Excavation Stopped, Target Depth Reached	Indicator Sample No. D 05991
		950		

FORM: A7 4.4(SGS)(2016.08.31) SANAS Technical Signatory : Gregory Bell

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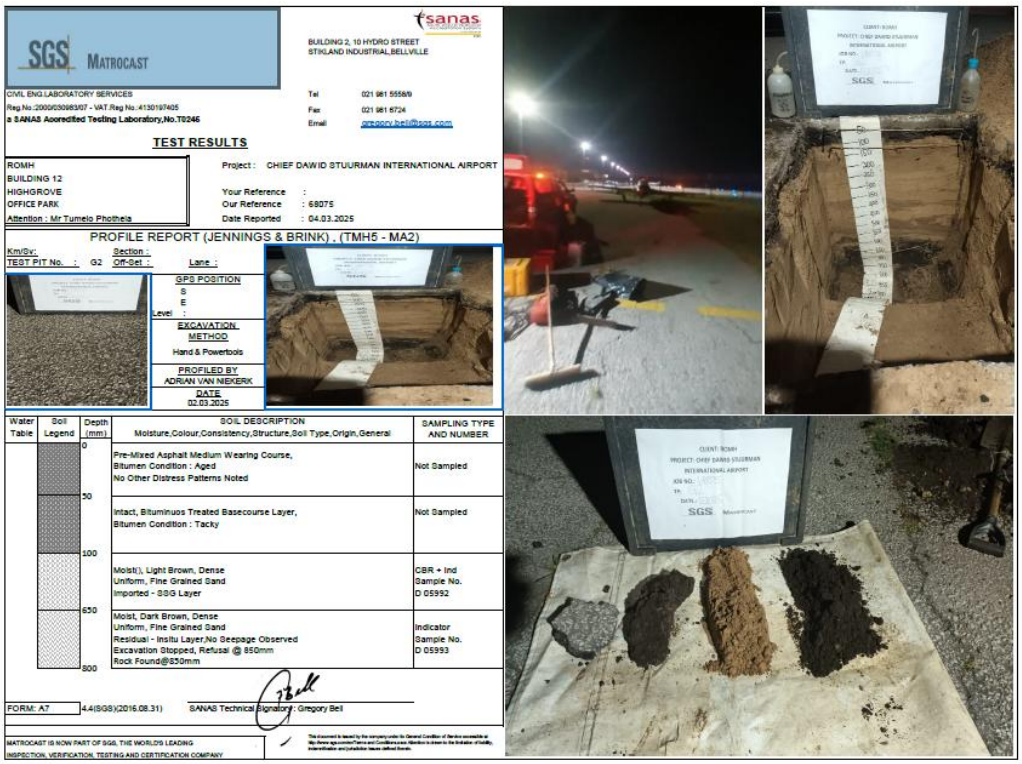
Figure 4.7.5

AIRPORTS COMPANY
SOUTH AFRICA



SGS MATROCAST

BUILDING 2, 10 HYDRO STREET
STIKLAND INDUSTRIAL,BELLVILLE

CIVIL ENG.LABORATORY SERVICES
Reg.No.:2000/030983/07 - VAT Reg No.:4130197405
a SANAS Accredited Testing Laboratory,No.T0246

Tel 021 961 5558/9
Fax 021 961 5724
Email gregory.bell@sgs.com

TEST RESULTS

ROMH
BUILDING 12
HIGHGROVE
OFFICE PARK
Attention : Mr Tumelo Phothela

Project : CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT
Your Reference :
Our Reference : 68075
Date Reported : 04.03.2025

PROFILE REPORT (JENNINGS & BRINK) , (TMH5 - MA2)

Km/Sv: Section :
TEST PIT No. : G2 Off-Set : Lane :

GPS POSITION
S
E
Level :

EXCAVATION METHOD
Hand & Powertools

PROFILED BY
ADRIAN VAN NIEKERK

DATE
02.03.2025

Water Table	Soil Legend	Depth (mm)	SOIL DESCRIPTION Moisture,Colour,Consistency,Structure,Soil Type,Origin,General	SAMPLING TYPE AND NUMBER
		0	Pre-Mixed Asphalt Medium Wearing Course, Bitumen Condition : Aged No Other Distress Patterns Noted	Not Sampled
		50	Intact, Bituminuos Treated Basecourse Layer, Bitumen Condition : Tacky	Not Sampled
		100	Moist(), Light Brown, Dense Uniform, Fine Grained Sand Imported - SSG Layer	CBR + Ind Sample No. D 05992
		650	Moist, Dark Brown, Dense Uniform, Fine Grained Sand Residual - Insitu Layer,No Seepage Observed Excavation Stopped, Refusal @ 850mm Rock Found@850mm	Indicator Sample No. D 05993
		800		

FORM: A7 4.4(SGS)(2016.08.31) SANAS Technical Signatory: Gregory Bell

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Figure 4.7.6

AIRPORTS COMPANY SOUTH AFRICA

Table 4.7.1: Summary of test pit results of airside elements

CHIEF DAWID STUURMAN INTERNATIONAL AIRPORT																																							
SAMPLE DATA						SUMMARY OF TEST RESULTS																															Swell @ 100% Mod	'G' CLASS	
						SIEVE ANALYSIS (% PASSING) mm												SOIL MORTAR			GM	ATTERBERG CONSTANTS			SOIL CLASSIFICATION		MODIFIED AASHTO MDD		FIELD DENSITY		CBR at % Compaction								
Test Pit No	GPS Position	Depth mm	Layer Thickness (mm)	Sample No	Description	100.0	75.0	63.0	50.0	37.5	28.0	20.0	14.0	5.0	2.0	0.425	0.075	CS	FS	Mat 0.075		LL	PI	LS (%)	PRA	USC	MDD (Kg/m³)	OMC %	FMC %	% Compaction	100	98	97	95	93	90	AASHTO	COLTO	TRH
TP. T2		30-230	200	D 05980	Quartzitic Sandstone				100	99	92	85	80	56	37	20	10	45	27	28	2.33	-	NP	0.0	A-1-a(0)	SP-SC	2215	5.6	2.1	91	170	120	101	71	50	29.0	0.0	G4	
		230-570	340	D 05981	Brown Sand				100	97	96	94	91	85	78	68	10	12	75	13	1.44	-	NP	0.0	A-3(0)	SP-SC	1724	12.4	5.2	101									
TP. R1		250-500	250	D 05982	Quartzitic Sandstone		100	97	95	84	76	69	63	50	42	27	11	34	40	26	2.20	-	SP	0.5	A-1-a(0)	GP-GC	2189	5.6	3.8	98	113	61	45	24	13	5.3	0.0	G8	
		500-1000	500	D 05983	Dark Brown Sand								100	100	100	99	5	1	94	5	0.97	-	NP	0.0	A-3(0)	SP	1724	12.4	5.4	97									
TP. G1		40-220	180	D 05984	Quartzitic Sandstone	100	89	89	87	82	80	75	69	49	36	22	8	39	37	24	2.34	-	NP	0.0	A-1-a(0)	GP-GC	2283	5.4	2.1	96	95	65	54	37	26	15.0	0.0	G6	
		220-800	580	D 05985	Dark Brown Sand					100	100	99	99	97	96	95	10	1	88	11	0.99	-	NP	0.0	A-2-4(0)	SP-SC	1724	12.4	8.8	91									
TP. R2		250-400	150	D 05986	Quartzitic Sandstone			100	84	75	67	60	51	37	30	19	7	36	40	24	2.44	-	SP	0.5	A-1-a(0)	GP-GC	2215	5.6	2.9	91									
		400-550	150	D 05987	Quartzitic Sandstone	89	89	82	76	73	70	67	62	49	40	23	10	42	34	24	2.26	-	SP	1.0	A-1-a(0)	GP-GC	2186	6.5	6.2	-	105	63	49	29	18	8.2	0.0	G6	
		550-1000	450	D 05988	Dark Brown Sand					100	100	100	99	97	96	94	6	2	92	6	1.04	-	NP	0.0	A-3(0)	SP-SC	1724	12.4	5.2	101									
TP. R3		250-300	50	D 05989	Quartzitic Sandstone		100	96	90	80	66	56	51	38	30	18	7	38	38	24	2.45	-	SP	0.5	A-1-a(0)	GP-GC													
		300-500	200	D 05990	Quartzitic Sandstone		100	95	93	93	87	81	76	62	52	35	16	32	37	31	1.97	-	SP	1.0	A-1-b(0)	SC	2204	6.5	2.7	94	8.3	7.1	6.5	5.6	4.8	3.8	0.0	-	
		500-950	450	D 05991	Dark Brown Sand							100	100	99	98	97	8	1	91	8	0.97	-	NP	0.0	A-3(0)	SP-SC	1724	12.4	6.2										
TP. G2		100-650	550	D 05992	Light Brown Sand									100	100	100	4	0	96	4	0.96	-	NP	0.0	A-3(0)	SP	1724	12.4	7.3	98	46	33	28	21	15	9.2	0.0	G7	
		650-850	200	D 05993	Dark Brown Sand					100	99	99	99	99	99	98	22	1	77	22	0.82	-	NP	0.0	A-2-4(0)	SC	1724	12.4	9.5	97									

PART C5 : ANNEXURES

PART C5: ANNEXURES

Annex A: Airside

Key site data

The airside is a restricted area with stringent access control measures put in place. The Contractor is reminded that this is a National Key Point and as such must adhere to all airport's rules and regulations regarding health safety, environment, security, fire and access control.

1.1 Access

- The Consultant shall liaise with ACSA Security Staff in order to obtain access permits for his staff and vehicle working at the airport.
- Personnel and vehicles entering or leaving the site will be subjected to routine searches.
- The Consultant shall obtain the "gate permit" from the Project Manager before material and equipment are brought and removed from the airside.
- The Consultant shall include in his rates the costs for access permits and no extra payment or claim of any kind will be allowed on account of difficulties of access to site.

1.2 Permits

- The Consultant shall familiarize himself with ACSA's safety and security requirements relating to permits to prevent any unnecessary work delay.
- This shall include the permit application process.
- The Consultant shall have no claim against ACSA in the event that a permit request is refused.
- The following table is not all inclusive, but is provided for illustration purposes:

Permit	Required by/for	Department
AVOP – Airside Vehicle Operator permit	All drivers of vehicles on airside	ACSA Safety
Airside Vehicle Permit	All vehicles that enter airside	ACSA Safety
Basement Parking Permit	All vehicles allowed to enter the delivery basement	ACSA Parking
Personal Permit	All persons employed on the airport	ACSA Security
Cell Phone Permit	All persons taking cell phones to airside	ACSA Security
Tools & Laptop Permit	All persons taking tools and laptop to airside	ACSA Security
Camera Permit	All persons taking camera equipment to airside	ACSA Security
Hot Works Permit	All welding and/metal cutting work on the airside	ACSA Safety
Airside Projects/Works Permit	For all projects on the airside	ACSA Airport Operations / Safety
Low/Medium Voltage Permit to Work	For all work on substations, distribution boards and cables	ACSA Electrical Maintenance

- Proof of having attended the Airside Induction Training course is required for all personal permit applications. This is for all personnel involved with or responsible for the implementation of various aspects of the national civil aviation security programme and those authorized to have unescorted access to airside areas receive initial and recurrent security awareness training.
- Fees are levied for these courses. Fees are further levied for all permit renewals and refresher courses where applicable.
- No work shall be done without a written permission in the form of a permit/works order.

- Proof of having attended the General Aviation Security Awareness Training course is required for all personal permit applications.

1.3 Cell phones and two-way radios

- Use of cell phones are not permitted unless the user is in possession of an appropriate Airport permit for the device.
- Cell phone permit issuing authority lies with the ACSA Security department.
- The Consultant will not be allowed to use two-way radios at the Airport unless these radios are of the type, model and frequency range as approved by the ACSA IT department.

- Approved radios may be arranged via said department – payment will be for the account of the Consultant.

1.4 Hidden and other services within site

There might be water and sewer pipes located underground. Also, there are other cables going through the trenches and these must be treated as live cables. There are also communication cables located underground

Annex B: POPIA

CONFIDENTIALITY AND DATA PROTECTION

Save as provided in this clause (*Confidentiality and Data Protection*), each Party shall, and shall procure that its Affiliate and their respective officers, directors, employees, agents, auditors and advisors shall, treat as confidential all information relating to the other Party or its Affiliates thereof or relating to their respective businesses that is of a confidential nature and which is obtained by that Party in terms of, or arising from the implementation of this Agreement, which may become known to it by virtue of being a Party, and shall not reveal, disclose or authorise the disclosure of any such information to any third party or use such information for its own purpose or for any purposes other than those related to the implementation of this Agreement.

The obligations of confidentiality in this clause shall not apply in respect of the disclosure or use of such information in the following circumstances:

in respect of any information which is previously known by such Party (other than as a result of any breach or default by any Party or other person of any agreement by which such Confidential Information was obtained by such Party);

in respect of any information which is in the public domain (other than as a result of any breach or default by either Party);

any disclosure to either Party's professional advisors, executive staff, board of directors or similar governing body who (i) such Party believes have a need to know such information, and (ii) are notified of the confidential nature of such information and are bound by a general duty of confidentiality in respect thereof materially similar to that set out herein;

any disclosure required by law or by any court of competent jurisdiction or by any regulatory authority or by the rules or regulations of any stock exchange;

any disclosure made by a Party made in accordance with that Party's pursuit of any legal remedy;

any disclosure by a Party to its shareholders or members pursuant to any reporting obligations that Party may have to its shareholders or members, provided that each such shareholder or member is notified of the confidential nature of such information and is bound by a general duty of confidentiality in respect thereof materially similar to that set out herein;

In the event that a Party is required to disclose confidential information as contemplated in this clause, such Party will:

advise any Party/ies in respect of whom such information relates (the "**Relevant Party/ies**") in writing prior to disclosure, if possible;

take such steps to limit the disclosure to the minimum extent required to satisfy such requirement and to the extent that it lawfully and reasonably can;

afford the Relevant Party/ies a reasonable opportunity, if possible, to intervene in the proceedings;

comply with the Relevant Party/ies' reasonable requests as to the manner and terms of such disclosure; and

notify the Relevant Party/ies of the recipient of, and the form and extent of, any such disclosure or announcement immediately after it was made.

Either Party may, by notice in writing, be entitled to demand the prompt return of the whole or any part of any confidential information supplied by it to the other Party, and each Party hereby undertakes to comply promptly with any such demand.

In line with the provisions of Protection of Personal Information Act, No 4 of 2013 (POPIA), particularly section 20 and 21, the service provider (referred to as Operator in POPIA) shall observe the following principles when processing personal information on behalf of the Company (referred to as Responsible Party in POPIA):

the Service Provider shall only act on the Company's documented instructions, unless required by law to act without such instructions;

the Service Provider shall ensure that its representatives processing the information are subject to a duty of confidence;

the Service Provider shall take appropriate measures to ensure the security of processing. The Service Provider shall ensure and hereby warrants that they have minimum IT and or physical security safeguard to protect personal information;

the Service Provider shall notify the Company immediately where there are reasonable grounds to believe that the personal information of a data subject has been accessed or acquired by any unauthorised person;

the Service Provider shall only engage a sub-operator with the Company's prior authorisation and under a written contract;

the Service Provider shall take appropriate measures to help the Company respond to requests from data subjects to exercise their rights;

taking into account the nature of processing and the information available, the Service Provider shall assist the Company in meeting its POPIA obligations in relation to the security of processing, the notification of personal information breaches and data protection impact assessments;

the Service Provider shall delete or return all personal information to the Company (at the Company's choice) at the end of the contract, and the service provider shall also delete existing personal information unless the law requires its storage; and

the Service Provider shall submit to audits and inspections. The Service Provider shall also give the Company whatever information it needs to ensure that the Parties meet their Section 20(1) obligations